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NEW YORK



GARDENS AND GARDENING

1950

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THE STUDIO GARDENING ANNUAL

EDITORS

F. A. MERCER & ROY HAY

635
Mer/Hay

THE STUDIO PUBLICATIONS
LONDON & NEW YORK

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*Printed in England by Jarrold and Sons Limited.
Published in London by The Studio Limited, 66
Chandos Place, W.C.2, and in New York City by
The Studio Publications Inc., 381 Fourth Avenue*

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ACKNOWLEDGMENTS

Our warm thanks are due to all our contributors for their valued co-operation, it being well appreciated that horticulturists prefer creating beauty to writing of their achievement of it.

Acknowledgment, no less sincere, is made to all those who have provided photographs for illustration, to Miss Kathleen Frost, upon whom the task of organizing and preparing this book for press has fallen, and to Mrs. Joan Compton who compiled the Index.

F. A. M. and R. H.

EDITORS' FOREWORD

TWO world wars in one lifetime have brought about many changes in the pattern of our lives. The altered circumstances are reflected in our gardens where simplicity, economy of labour and materials and low upkeep costs have become major considerations. Garden lovers are fast adapting themselves to the new conditions and are philosophically accepting the position; they are learning that it is not really essential to have lavish displays of costly bedding plants; they are finding a new appreciation of the beauty of more natural—and less costly—effects which can be gained from informal plantings of flowering trees and shrubs margined or carpeted with plants that require a minimum of attention. Gardeners, too, are becoming more discerning and if they can no longer have gardens of great extent they are taking pains to see that their more modest plantations contain nothing but the best of its kind.

Much reorganization of gardens is taking place. New gardens are still being made, and old ones, shabby from years of war-time neglect, are being renovated. Lawns which in our desperate days yielded their quota of food crops are now being restored. Neglected orchards are being grubbed and replanted and on every side there is an unprecedented horticultural activity in many lands.

Therefore, in this first issue of "Gardens and Gardening" to appear since World War II we have thought it worth while to include articles and photographs designed to help those who may be making or remaking gardens, on modest or ambitious lines, or who may merely wish to improve their

GARDENS AND GARDENING

existing gardens by replacing poor varieties with more desirable sorts, or by adding a selection of the many beautiful plants which can be grown in temperate climates similar to our own.

In this issue we have asked our contributors to remind us of the most outstanding species and varieties which have been available to us from time past, and to introduce us to the cream of the new plants introduced to cultivation since our last issue appeared in 1940.

We have been fortunate in obtaining contributions from eminent horticulturists whose experience of their particular subjects makes their advice especially valuable and we confidently hope that our readers will find therein many helpful suggestions for the embellishment of their gardens.

F. A. MERCER AND ROY HAY

Gardens Today

by ROY HAY

IT IS A STRANGE COMMENTARY ON OUR TIMES THAT, WHILE ENTHUSIASM for gardening has never been so high, many of our finest gardens should be falling into neglect, or disappearing altogether. During the war the food production campaign was the means of introducing some five million people to the craft of gardening. Many of them cultivated a plot of land from a sense of duty only, and when the stimulus of patriotism, or the fear of starvation, lessened, they gladly put away their spades and turned to other diversions. Countless more realized—often for the first time—the difference between vegetables culled fresh from the garden and those handled many times and humped and dumped in trains, ships, or lorries. They have joined the ranks of gardeners in perpetuity—albeit their horizons may continue to be bounded by the rows of fruits or vegetables.

But of the millions who first experienced the delight of co-operating with Nature in the production of war-time utilitarian crops, many thousands have embraced horticulture as their pastime and are graduating joyfully from the mundane cultivation of plants for the kitchen to the more exciting and aesthetic joys of ornamental gardening.

So, although taxation and high labour costs are causing fine old gardens to fall into neglect or are reducing to a fragment the parts of such gardens that can be cultivated, thousands of smaller gardens are rapidly turning into miniature show places, maintaining the reputation for good gardening, of which as a nation we are so proud.

The economic changes that are still going on are having a profound effect upon gardening—in design, in practice, and in the plants we grow. The great gardens of many acres, requiring the labour of upwards of a dozen men, are fast disappearing. Some owners of such estates are contriving by a degree of commercialization and often by the liquidation of capital investments, to maintain their properties with much of their old splendour undiminished. These are very few, however, and the most beautiful seldom lend themselves to commercialization; it would be a crime to allow such gardens to fall altogether into decay, and, in an effort to save some of the most beautiful, the National Trust has formed a Gardens Committee of which half the members are nominated by the National Trust and half by the Royal Horticultural Society, under the

chairmanship of Lord Aberconway. An appeal was recently launched for funds to enable the Committee to maintain gardens which may be offered to the Trust and which, by reason of their excellent design, or because they contain collections of choice and rare plants, are worthy of preservation. Bramham Park, near Leeds, Hidcote Manor, that gem among Cotswold gardens, and part of Lord Aberconway's own garden in Wales are among the first of the famous gardens which have been given to the National Trust on behalf of the nation and we rejoice that they will be preserved to bring pleasure to future generations of the public. The need for further funds is urgent and it is suggested that many owners of beautiful gardens who already open them to the public for charities may open them on one or more days in the year to raise funds for the National Trust Gardens Scheme. It would be a fitting and delightful gesture.

It is not surprising, in view of the stringent times, that a metamorphosis should be taking place in our gardens. The scientist and the technician have been called upon to assist in the present emergency and to evolve machines or chemicals which will lighten the costs of maintenance. Motor or electric mowing machines, motor cultivators, ploughs and hoes; all play their part. Electric hedge trimmers cut our hedges in an eighth of the time needed by the old man with the shears. Selective weed-killers destroy weeds in our lawns, leaving the grass unharmed and eliminate hours of work in hand weeding. New tools, spraying machines, soil fertilizers, and electrical heating equipment, are all helping in saving labour and producing a better result.

But in spite of all the efforts of the chemists and the engineers it is imperative for the majority of garden owners to simplify their plantings, to restrict severely the formal bedding schemes and to use more permanent plants. This is resulting in either smaller gardens or in more natural effects obtained with flowering trees and shrubs, or semi-wild gardens where a larger area can be maintained with a minimum of labour.

If gardens are becoming smaller, there is the consolation that their owners are concentrating on design and quality, on plants that are rare as well as beautiful, and they are insisting that if they can only accommodate a limited range of plants they want that range to consist of nothing but the best.

THE IMPORTANCE OF DESIGN

The requirements of the modern garden owner are being reflected in the trends of post-war garden design. For large gardens where upkeep

costs must be kept to a minimum, the emphasis is being placed on natural woodland effects where flowering trees and shrubs can be grouped to give vistas of colour in their flowering periods or for their autumn foliage, and full use is made of the margins of shrub plantings to group low-growing subjects such as Heathers and other plants which require little attention. Further delightful effects are obtained in the simple woodland garden by under-plantings of bulbous plants—Narcissi, hardy Cyclamens, and many others.

Even on smaller sites some excellent designs have been executed, combining the formal with the informal. For the distant parts of the garden, trees and shrubs again are skilfully used, placing those which can be expected to become specimen plants at strategic points. Nearer the house, the gardens merge into a more formal character with herbaceous borders or permanent plantings of Roses taking the place of the bedding plants so beloved by our grandfathers, but which had to be renewed once or twice in each season.

Lawns are being used more sparingly, although no modern garden designer can dispense with some form of lawn to offset the other garden features.

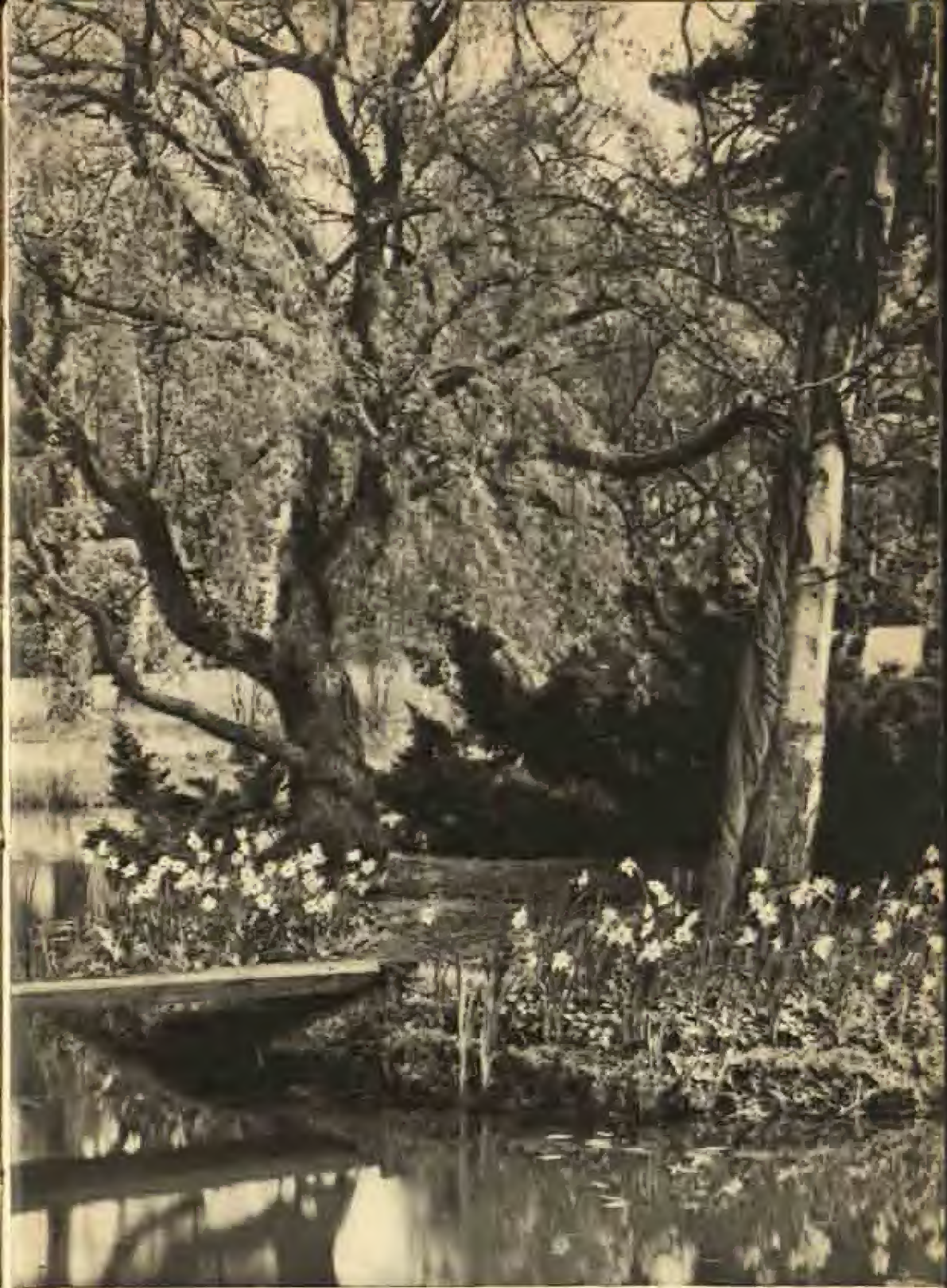
It is noticeable that water plants and plants of the water-side are again coming into favour, so that even if natural water is not available, as in most gardens, ornamental pools are to be found in the more formal designs. Although planning in these days is on a much less grandiose scale, even more skill is required than of old to place the permanent occupants of the garden in situations where they will be seen to the best advantage. The use of flowering trees and shrubs and perennial plants requires a closer knowledge of their habits and more imagination than did the more stylized forms of bedding practised a quarter of a century ago. Plantings are now made to last for many years and it is not so easy to rectify mistakes when such permanent plants are employed.

Perhaps the most skilful and delightful trend of modern garden design is in the direction of "combined planting"; instead of devoting entire borders to a single plant, the Delphinium, Dahlia or Chrysanthemum, for example, the combined border is rapidly becoming more popular. In such borders specimen shrubs, Azaleas, Rhododendrons, Lilacs, Magnolias, and many others are given prominent positions and blending with them are the Lilies, Gladioli, Irises, and other plants which combine so beautifully with the larger flowering shrubs. Not only is height and form

exploited to the full, but, by skilful choice, colour may be had in infinite variety over a very long period. Colour planning in a border is one of the most difficult yet most absorbing aspects of gardening and to a large extent success depends upon personal idiosyncrasy. There is no easy way to the achievement of a harmonious border and the first essential is a knowledge of plant form and colour. The articles which follow will provide much information upon these two fundamental points, and personal observation at flower shows or in established gardens will add to the knowledge gained from books.

The late Sir Harry Veitch used to remark that horticulture was never so prosperous as during a slump in the Stock Exchange, and it certainly seems that during these days of austerity the same thing holds good, for the horticultural exhibitions are thronged with eager crowds anxious to discover the latest and choicest varieties of their favourite plants. This increasing discernment upon the part of the gardening public has encouraged the raisers of new varieties to redouble their efforts and to launch an ever-increasing stream of novelties upon the market. New Roses, incredibly generous in the quantity and quality of their blooms, new Dahlias and Gladioli of a size and a variety of colour undreamt of a few years ago, tempt us anew every season. The greatest development of all, perhaps, has been in the early-flowering Chrysanthemums; until a few years ago the outdoor Chrysanthemum, while gay enough for ordinary garden purposes, was scorned by the real connoisseur of these lovely autumn flowers. It was to the greenhouse varieties that we looked for the large flowers of perfect shape and exquisite texture. Now in August and September, with no more shelter than a piece of canvas suspended above them in times of rain and storm, we can have, outdoors, a bewildering range of varieties, single, double, reflexed or incurving, often seven or eight inches across and in a range of shades wide enough to satisfy the most exacting.

It is interesting that, among the many modern tendencies, we should be returning to the ways of our forefathers in the technique of fruit growing. In the old days of large formal gardens the cordon or espalier tree was a great favourite, either against a wall or as a background to the various borders. Now, we are returning to the old ways more and more, because in a small garden there is no room for bush or standard trees, and borders of cordon Apples and Pears are becoming, once more, a familiar sight. Not only is their blossom a joy in the spring, but they produce crops of



Daffodils beside the pool at Windlesham Moor, Surrey



Photo: Camrose Tinned Seeds Ltd.

*A well-planted rock garden in a natural setting
with dwarf shrubs skilfully used to give height*



Above: Sir Watkin Daffodils naturalized at Haslemere Court, Surrey
Below: Daffodils naturalized at Chobham Place, Surrey



*Above: A happy blend of rock garden and informal woodland
Below: A colourful summer border; wide paved edge to lawn*



An informal Rhododendron walk boldly planted to give riotous colour in the foreground with a verdant foil behind

Photo: Camera Tonic Studio Ltd.



*Photo:
Carter's Tested
Seeds Limited*

A formal design for the garden of medium size

Below: A view of the formal garden at Hidcote Manor on the Gloucestershire and Worcestershire borders



Opposite: Beaton End, Haddenham, in summer





The Nymphaea pool with marginal plantings at Davenham, Worcestershire

GARDENS TODAY

high quality fruits in a minimum of space and they are accessible enough to make the routine operations of pruning, spraying, and harvesting a pleasure instead of a labour.

Good gardeners have always been lovers of fine turf. In the large estate or in the smallest and most intimate garden, the lawn is an indispensable feature and accounts for many hours of care throughout the year. The pages which follow contain advice from the leading experts in their various subjects, and it is our hope that from these pages readers may draw ideas and inspiration to assist them to extract the full measure of delight from their gardens and to savour the pleasure of a garden that contains beauty and rarity, careful design, or pleasing informality.

Early-Flowering Chrysanthemums

By CHARLES H. CURTIS, F.L.S., V.M.H.

SO FAR AS WE KNOW IT, THE HISTORY OF THE CHRYSANTHEMUM COMMENCED in "far Cathay". So greatly were the flowers prized that only the Emperor, and perchance a few imperial relatives, were allowed to grow them. Later, raising and cultivation became general throughout China and the national interest in Chrysanthemums was demonstrated by the institution of the Order of the Golden Flower. The Chrysanthemum had been developed and improved considerably—according to Far-Eastern tastes—by the time it crossed the sea and reached Japan during the Era of the Tempyō (724-749). We learn that an Ode to Chrysanthemum Flowers was recited by the Emperor Kwammu on the occasion of an Imperial Banquet given in October 797. Here again, cultivation was limited, at first, to the gardens around the Imperial Palace, and then to the nobility.

Long years passed before Chrysanthemums were introduced to European gardens; indeed, it was not until 1862 that they arrived in England. More years passed before early-flowering Chrysanthemums began to contend for popularity with the late varieties that need greenhouse protection and flower in November, December, and January.

DEVELOPMENT AND POPULARITY

Before, during, and since the World War no hardy flowers have shown so much improvement in form, colour, and size as early-flowering Chrysanthemums. From the floricultural point of view they now compete favourably with Dahlias, although their flowering season is not quite so long. Nor are they capable of providing such a blaze of colour in the garden, but they are quite hardy, whereas the Dahlias are not. Moreover, early-flowering Chrysanthemums are delightful as cut flowers and as such are very popular with florists. There are varieties that flower in August and others that are at their best towards the end of October and may even carry on well into November if the weather is comparatively mild.

A few "old-timers" among amateur and professional growers will remember a variety named *Mme C. Desgrange*, which bore rather flimsy, white, yellowish-centred flowers in great profusion in September.

EARLY-FLOWERING CHRYSANTHEMUMS

This had a bushy habit and under good cultivation grew three feet tall. It was very popular for garden decoration and also for market use some sixty years ago. A sulphur-yellow sport from this old variety, named George Wernig, was also grown somewhat extensively in those bygone days.

Mme Marie Massé was another old favourite that did much to place early-flowering Chrysanthemums "on the map". This had a bushy, branching habit, needed no manipulation, grew about thirty inches tall and had fairly large, lilac-mauve flowers that began to open about the middle of August; it became a very popular garden and market variety and received an Award of Merit from the Royal Horticultural Society over fifty years ago. Fortunately, this variety produced several distinct colour sports—including Crimson Massé, crimson by courtesy for the colour was a ruddy shade of bronze; White Massé, creamy-white; Improved Massé, rosy-mauve; Horace Martin, bright yellow, a sport from Crimson Massé; Rabbie Burns, rosy-cerise; Ralph Curtis, creamy-white; Pink Beauty, bright pink, and Orange Massé, orange-terra-cotta.

Other varieties that laid the foundation stones on which the present-day popularity of this useful race of garden plants has been built were Monsieur Gustave Grunnewald, which bore its pretty, white, pink-shaded flowers almost continuously from August to October; Rycroft Glory, yellow, flushed with red, rather late; Roi des Blancs, the most popular white variety for many years; Polly, orange-yellow, tinted with bronze, very free and of bushy habit; Perle Chatillonnaise, creamy-white, rather tall, but charming; Mychett Glory, bronze-yellow, shaded with salmon, but had to be disbudded to obtain good blooms; Nina Blick, reddish-bronze, three feet, a sturdy grower that commenced to flower in August and was extremely popular for several years; Harvest Home, a crimson, with golden tips and reverse, producing brilliant flowers of modest size very freely in September, and still grown; Goacher's Crimson (A. M., R.H.S., 1901); and Le Pactole, bronzy-yellow. These were among the forerunners of the large "Japanese" type of early varieties.

Early-flowering Chrysanthemums had so greatly advanced in popularity, especially among amateur cultivators, that the National Chrysanthemum Society held an exhibition and conference at the Crystal Palace in 1905. This function amply demonstrated an enthusiasm of which raisers were not slow to take advantage. I took some part in the conference and had the pleasure of editing the "Proceedings" which were published by the

following year. Since that date I have always grown a modest collection of varieties, some in groups in the flower border, but mostly in a separate border, where they are more easily managed and give me and my friends a great deal of pleasure. I have found that although my friends admire the Dahlias they are far more interested in the Chrysanthemums and regard them as "nicer".

The names given to the older varieties are an indication that French raisers took far more interest in early-flowering Chrysanthemums than their British confrères, but it is no less interesting to find a few French names among modern raisers. British raisers have increased the range of colours, and brought early-flowering Chrysanthemums to a perfection undreamt of half a century ago.

When the annual output of new varieties increased, the Floral Committee of the National Chrysanthemum Society became more critical in its appreciation of novelties submitted for its consideration. The question of synonymous—or too-much-alike—varieties became a serious one and Trials became a necessity. At last, the National Chrysanthemum Society and the Royal Horticultural Society gave joint consideration to this important subject, with the result that Trials were instituted at the R.H.S. Gardens, Wisley, Surrey, and a Joint Early-flowering Chrysanthemum Committee was set up to adjudicate and make awards. This Committee consists of representatives of each Society, and inspects the Trials on three or four occasions during the flowering season. Standard varieties are grown and labelled, but all novelties are grown under number until an award is made, and then the appropriate varieties are labelled. Each year the standard is raised, and varieties which have failed to receive recognition in three years are discarded. By these methods the potential purchaser has the opportunity of discovering which are the best varieties in the estimation of a body of experts composed of amateurs, raisers, and market growers. All Fellows of the R.H.S. are at liberty to inspect the Trials and "see for themselves".

CULTIVATION

Cultivation is a fairly simple business; the site must be double-dug in the winter and left rough until a little while before planting time. If the soil is in that state of fertility graphically described by the gardener as "in good heart", and therefore containing residues of organic manures, few additions are necessary. If the site is dug before Christmas, distribute

EARLY-FLOWERING CHRYSANTHEMUMS

bone meal at the rate of 4 oz. per square yard during the process. Poor soil, however, must receive a fairly heavy dressing of stable manure or compost-heap material, but don't bury it too deeply, as Chrysanthemums are not very deep-rooting plants. Planting time is usually the end of April or early in May, but it pays to cultivate the site two or three weeks prior to these dates. Apply a liberal surface dressing of leaf-mould, wood ash, and soot; lightly fork these in, and create three or four inches of "good tilth" to receive the plants and give them a good start in life.

Where early-flowering Chrysanthemums are to be used as part of the general scheme in a flower border, it is a good plan to set them out in groups of three of one variety, planting them eighteen inches apart in the form of a triangle. These need not be staked, but will need support of some kind; twiggy hazel, beech, or elm branches inserted around and between the plants will be quite hidden by flowering time. A border devoted to early-flowering Chrysanthemums makes for easier cultivation, tying, etc., if the plants are placed eighteen to twenty-four inches apart each way in regular rows.

Plant with a trowel, plant firmly and deep enough to allow the lowest leaves to stand clear of the soil. Follow planting with a thorough watering unless rain falls, and on the following day, if fine, hoe the surface soil to prevent rapid evaporation of moisture, and "make a tidy job of it". Two important matters must receive attention. Young plants are usually in small pots, or may arrive from the nurseryman without pots, but packed with moss and paper to keep the roots moist during transport; but whether they are purchased or have been grown at home, never forget that they must be watered a few hours before they are planted, otherwise the roots will not be moistened for a long time, no matter how abundant the supply of water after planting.

The second important matter is that of labelling. Nothing so upsets your dignity as to be asked the name of a certain variety which you have momentarily forgotten, and you have to hunt for a label that has been broken by the hoe, or on which the writing is illegible. The labels must be of good size—ten-inch—substantial and thoroughly painted. Whether the name is written in full or only a number is used (corresponding with a similar number and the name in your garden pocket-book), is entirely a personal matter. I prefer to have the name on the label.

Each plant will need at least one stake, and four-feet bamboos serve very well as they can be inserted one foot deep and last several years,

provided the bases are cleaned and dried and the canes are stored in a dry shed during the winter. Many growers insert the stake at planting time; I usually wait for the soil to settle down before staking, as the treading inseparable from the operation does more good than harm and also provides an excuse for finishing the job tidily with a vigorous use of the Dutch hoe.

For tying and looping I use a soft twine of the green-twist type; it is easier to manage than raffia as the roll or ball fits snugly into the jacket pocket and the twine responds sweetly to the demand. Raffia has to be torn into sizeable widths, wetted and twisted, and these operations take time. Tie firmly but not tightly, always remembering that a tight tie may severely damage a swelling stem. For short rows, wherein one plant is directly behind the other, a simple but effective method of support may be adopted: insert stakes at each end and along the sides of the row, attach the twine firmly to one of them and run it round the row, but twist it round each stake; two or three "rounds" of twine will suffice and may be put on as the height of the growth demands.

Certain varieties "break" quite naturally and produce a sufficient growth without manipulation; nevertheless, it is a good plan to pick out—pinch—the growing point so far back as the last pair of fully developed leaves. In the absence of the hard finger and thumb nails that are among the hall-marks of a working gardener, the execution may be carried out by the use of blunt-pointed scissors or a small pair of secateurs, but hard nails on thumb and first finger are the best and quickest executioners. This job, known as "stopping", should be carried out during the end of May or the first week of June, and certainly not later than the third week of the latter month, otherwise the plants will not have time to make growths which will bloom gaily in autumn.

Subsequent manipulation is easy, but requires observation and patience, together with experience, for undoubtedly certain varieties grow more freely than others in any given type of soil and local climatic conditions. However, six to ten flowering growths will provide a useful display of good blooms, provided all flower-buds, except the terminal one, are removed. Dealt with in this way, and given good cultivation, very many modern varieties will develop blooms six inches in diameter on long, slender, stiff stems that lend themselves to all kinds of floral decorations.

Feeding and watering need not cause any headaches. Obviously no plant of an herbaceous character can grow and flower well unless the

EARLY-FLOWERING CHRYSANTHEMUMS

roots have an ample supply of moisture to sustain them, but the Dutch hoe and mulchings will greatly reduce the use of hose and watering-can. Driblets of water are far more damaging than no water at all, as they attract roots to the surface where sun and wind will kill them. Water abundantly if watering is necessary, and when the soil has absorbed the moisture give another plentiful supply a few hours later. Should a fertilizer appear desirable use a soluble proprietary one, according to the maker's directions, immediately between the waterings with clear water. Never apply it when the soil is dry. By the middle of July such watering and feeding is usually desirable, and much time and labour will be saved if the surface soil is hoed soon afterwards and mulched with leaf-mould, or a mixture of sphagnum peat and leaf-mould or hop-manure; the mulch should be three inches deep.

Notwithstanding the paradoxes, there are late early-flowering Chrysanthemums and early-flowering late sorts, and where space permits these may be grown together and protected from unkind weather by canvas stretched over a light framework of wood. They extend the season and are especially valuable where there is no greenhouse accommodation—but they are another story.

GROWERS' TROUBLES

Every class of plants—fruits, flowers, or vegetables—grown extensively is subject to attack from diseases and insect pests; consequently, early-flowering Chrysanthemums are not immune from these troubles. But, being grown out of doors, they are not so liable to infection or infestation as those cultivated for flowering under glass, where mildew is a major trouble. A few years ago early-flowering varieties were attacked by one of the insidious eelworms, microscopic pests that invaded stems and roots and threatened the Chrysanthemum industry with destruction. But once again the N.C.S. and R.H.S. joined hands, investigations were conducted, experiments made, and at last it was found that if the plants lifted late in autumn were washed clean of soil and placed in water at a temperature of 110°F., for 20 to 30 minutes, the eelworms were killed, the plants retained their vitality and produced cuttings in due course. Now, practically every nurseryman adopts the hot-water treatment and his young plants are unaffected. The leaf miner reduces the vigour of the plants by mining between the upper and lower surfaces of the leaves; the pale "canals" betray its presence and by that time there is no cure. Badly

infested leaves should be removed and burnt and the plants sprayed with a weak nicotine solution, or a quassia extract, so as to render the leaves distasteful to the fly (*phytomyza atricornis*) that is responsible for the damage. I have found that a useful preventive measure is clear soot water to which has been added just sufficient soap to make it soft or smooth. This mixture has high insecticidal qualities and also encourages growth, therefore it has a double value if the plants are sprayed with it at intervals of ten days. The soap increases adhesion, and consequently the insecticidal value of the soot is retained for several days, unless heavy rain follows an application. Moreover, if the spraying is done in the evening of a warm day the plants are refreshed by it. In this connection it seems desirable to point out that several wild species of Compositae, members of the Senecio or groundsel family, are very susceptible to attacks of the leaf miner; therefore, all such weeds should be exterminated, otherwise they will act as hosts for several broods and increase the probability of infestation.

Green-fly is easily disposed of by occasional applications of Derris powder, but I am sure that the repeated sprayings with soot water have a markedly preventive effect.

PROPAGATION

One of the great delights in the cultivation of early-flowering Chrysanthemums is that of raising one's own plants. Plant propagation always interests and fascinates me, and I think it would be a pleasurable job for anyone with a reasonable amount of patience.

It is quite possible to propagate in the rough and ready way known as division. This simply means the dissection of the old stool just when it begins to make new growths. The number of pieces will depend upon the size and vigour of the old plant when it is lifted. In general, the healthiest pieces are those on the circumference, and these should be chosen for replanting and the hard, central portion discarded. The chosen portions are hardly likely to produce blooms of exhibition size and form, but arranged in triangular form, and spaced about fifteen or eighteen inches apart, they will eventually combine to make a bold group which will give a colourful display at flowering time. The tips of the growths may be pinched out when the divisions have thoroughly established themselves and become thriving plants.

Young, sturdy plants raised from cuttings are by far the best



Sweetheart varieties. A useful series. Sweetheart has sported freely and there are now white, bronze, pearl-pink, red, rose-pink, and pale yellow forms.



Opposite: Monsal Dale

A very fine and early variety with large flowers of reflexed form and lovely cream-pink colour

Below: Tibshelf Shell

An incurving variety of salmon-pink colour, with a red-gold centre



Above: Improved Zenith

A handsome, large-flowered variety of deep, rich purplish-maroon colour

Below: Balcombe Glory

A very handsome, free-flowering, rich yellow variety



Right: Alfreton Ivory

This bears elegant flowers of a deep ivory shade







*Opposite: Mayford
Pink*

*The large, stout-textured
flowers are of a glowing
pink shade*

Right: Daydream

*A very pleasing flower of
soft pink colour*

*Right lower: George
McLeod*

*A useful, yellow, in-
curving variety; very
popular in the Midlands*

Below: Diane

*A reflexed type with soft
mauve colouring*





*Above: Samburst
Flowers of the largest
size, bright yellow, often
with a slight tinge of
orange; a fine variety for
exhibition*

*Above right:
Polar Beauty
A particularly fine, large-
flowered pure glistening
white variety*

*Right: Ceensa
Most attractive, the deep-
pink florets being tipped
with golden-yellow*

*Opposite: Charter
Very distinct and of rich
apricot-buff colour*







Janté Wells

*Very dwarf and bushy habit, producing an abundance
of neat, small, golden-yellow flowers*

proposition, and their propagation need not cause any worry. Late in the autumn, after the old stems have been cut down within about ten inches of ground-level, lift one or more plants of each variety and carefully wash every bit of soil from the roots, for there is no telling how many "creeping things" may have decided to make their winter quarters therein. Cover the roots with a moistened sack, unless they are to be dealt with almost immediately. The next business is to place the clean "stools" in boxes that are about four inches deep; very little drainage will be needed—indeed, I never use any, provided there is a tiny space between the bottom boards—but cover the floor of the box with semi-decayed leaves and place a fifty-fifty mixture of leaf-soil and sphagnum moss-peat over the roots, pressing it firmly but not tightly in position. Having finished the job with a good watering through a rosed water-can, and allowed the surplus water to drain away, place the boxes in a cold frame on an ash base that has had a fairly heavy dressing of old soot. So long as the weather is free from frost and snow, allow plenty of ventilation, but the frame light should be left in position in case of rain and also because it can be shut down quickly when the temperature falls below freezing-point. Cover the frame with mats during very severe weather, especially during the night.

Although it is possible to conduct the business of propagation in the cold frame, it will not be a convenient proposition, and moreover, the start will be a late one. A greenhouse provides the best nursery, and if it is provided with artificial heat to keep frost out, so much the better, but I manage quite well with an unheated house, the boxes being brought in at the end of February. When new growths are three or four inches long cut them quite close to the base, remove the lower and small leaves, cut the stem cleanly across at the base and insert it in a mixture of loam, sterilized leaf-mould, moss-peat, and sand, well mixed, sifted finely, and pressed firmly. Use three-inch pots and place two or three cuttings in each, first surfacing the soil with sand. I make the holes with a piece of iron, about a quarter of an inch in diameter—it lasts so much longer than a blunt-pointed stick, and never snaps and leaves half of itself in the pot. The hole made, slip in the cutting immediately, so far as it will go, and *press the soil firmly around the base*—if you don't, rooting may not take place before the cutting wilts. Apply water very carefully through a fine-rosed can, lest the soil be washed out and the cuttings loosened. I set the pots in boxes deep enough to allow a pane of glass to cover them

without disturbing the cuttings. I also pack slightly moistened moss-peat around the little pots, as I find this reduces the need for watering. Remove the glass each morning, and replace it after wiping away condensed moisture. In a week or ten days the perkiness of the cuttings will show that rooting has commenced.

In due course, separate the cuttings, allowing each one to retain all its roots and the soil attached thereto, and pot them in 60-sized pots, in a richer compost than the one used for the cuttings. I don't bother about drainage, but place a small piece of semi-decayed stable manure over the basal aperture, or some flaky leaf-mould. Add a small amount of crumbly manure to the ingredients previously cited and a light dusting of old soot, and the mixture will carry the plants safely until planting time. Directly these youngsters have recovered from the disturbance caused by separation and potting, place them in the cold frame, where ventilation can be increased steadily until the frame light is dispensed with entirely. Never allow young plants to become dry at the roots and never forget an overhead sprinkling with clear soot water at intervals of a few days. Plants that suffer from thirst or semi-starvation are never a success. Follow these directions, with small variations incidental to varied circumstances, and early-flowering *Chrysanthemums* will give great pleasure and provide an entertaining and interesting floricultural hobby.

SELECTION OF VARIETIES

All the leading amateur and professional cultivators of early-flowering *Chrysanthemums* have their own favourite varieties, and selection may be governed by commercial production, market taste, for their exhibition size or decorative garden value. In presenting the following selection, garden value has been the chief concern, but, even so, personal taste will always intrude; moreover, it must be conceded that certain varieties succeed better in the Midlands and the North than in the drier atmospheric conditions of the South and East. However, I do not think any prospective grower will be disappointed with the varieties I recommend, and, of course, dealers' catalogues may assist—and possibly confuse—the final decision.

ALFRETON IVORY.—The finely formed, broad-petalled flowers are ivory-white.

APOLLO.—This is the only Korean variety I have retained, as I like its

EARLY-FLOWERING CHRYSANTHEMUMS

rather small, single, glowing terra-cotta flowers, which are charming for house decoration.

ARNHEM.—In addition to large, substantial flowers and rich bright brown colouring, the blooms of this handsome variety will withstand unkind weather better than most.

AUGUST PINK.—One of the earliest; a stout grower, with large, clear pink flowers, but I have not yet been able to flower it so early as August.

BALCOMBE GLORY.—A mid-season golden-yellow variety; very showy.

BALCOMBE SUPREME.—Brilliant crimson, with golden reverse; this is a comparatively new sort which has a good style of growth and is of medium height.

BARBARA.—A mid-season variety, opening about the middle of September. The rose-pink flowers may have a diameter of six inches under disbudding and good cultivation.

CAREFREE.—The rich, reddish-bronze flowers are very elegant and attractive.

CHARTER.—This bronze variety can be grown to produce quite large flowers.

CRENSA.—A beautiful variety of strong habit, with deep-pink flowers that are lightly tipped with red. Flowers in October. There is also a salmon-coloured form.

DAYDREAM.—This has proved very popular since its introduction in 1946; the flowers are a charming shade of soft salmon.

DIANE.—A large-flowering variety of reflexed type with soft mauve colouring.

DOROTHY SPEAT (A.M. 1946).—A pink variety that is fine for exhibition; the golden-salmon centre is an additional attraction.

FORTUNE.—A Woolman production that is remarkable for its small leafage and large, dazzling white flowers in which the florets are very broad but in no sense flimsy. It has found favour with market growers.

FREDA PEARCE.—The yellow and gold suffusion in the centre and its soft pink flowers make Freda Pearce very attractive, especially when the disbudded blooms are large. This September variety has received the Award of Merit of the R.H.S. and the N.C.S.

GEORGE McLEOD.—A fairly old variety with rounded, yellow flowers; still popular in some districts as disbudded flowers reach a large size.

GOLDENBLOOM.—One of the earliest; a stout grower with large golden-bronze flowers in which the florets are distinctly reflexed.

GOLDEN CIRCLE (A.M. 1946).—I like this large, golden-yellow variety with its incurving flowers that have a way of defying unkind weather. It blooms in September and is probably the best yellow of its type.

HURRICANE.—One of the Shoemith productions. This is a variety for which I have a great liking because of its large flowers and brilliant crimson colour, with golden reverse. With me it is of comparatively dwarf habit.

ILLUSTRIOUS.—The very large flowers of this variety are rich, bright crimson, of elegant form, but they are somewhat late and rarely open with me until October; but it is worth waiting for.

IMPERIAL YELLOW (F.C.C. 1946).—One of the best and most popular varieties raised by Mr. Vinten. It has clear, rich yellow flowers that may be as much as six inches in diameter, if disbudded and "done well". With me, it commences to bloom during the second week in September, but continues into October. If it has a fault, it is that it grows four feet tall.

IMPROVED ZENITH.—A large, loosely incurving form of the older Zenith, but the deep purplish-crimson colour does not please everyone.

JANTÉ WELLS.—A dwarf variety what is a personal favourite and usually finds favour with all who inspect my modest collection. The flowers are not much more than an inch across, golden-yellow, weather-proof and of pompon shape, and produced with incredible profusion; fine for massing. In 1945 I had a hedge of it and the colourful display lasted a long time.

MAYFORD PINK.—A beautiful, large-flowering variety; rose-pink, with golden centre.

MONSIEUR DALE.—A very charming variety, with broad, blunt-ended florets; blush, centre suffused with peach.

POLAR BEAUTY.—An exceptionally fine, large-flowered, white variety of dwarf habit.

ROYAL BRONZE.—A splendid variety with immense flowers of a bright and rich orange-scarlet shade. Like its near relative, Royal Pink, it is a grand Chrysanthemum for exhibition purposes.

ROYAL PINK.—Those who propose to enter the competitive arena cannot afford to omit this very large pink-flowered variety. Must be given extra good cultivation; flowers in September.

SNOWFALL.—A very charming and free-flowering variety with clear white blooms that last well both on the plant and when cut and placed in

EARLY-FLOWERING CHRYSANTHEMUMS

water. It should not be disbudded as the flowers are produced in branching sprays. I grew it for the first time in 1946 and fell in love with it.

SUNBURST.—Can be grown to produce flowers six or seven inches in diameter; yellow, with a faint orange suffusion.

SWEETHEART.—A very early sort, with fair-sized flowers of rose-pink colour, but with a shading of bronze on the reverse side of the florets (petals). There are several colour sports of this variety.

TIBSHIELF SHIELL.—Flowers slightly incurving; bright, shell-pink, pale red centre.

Novelties may be rather expensive but the purchase of a few each year adds interest to a collection and helps to maintain a high standard of excellence. Here are a few offered for sale in 1950: Alfreton Yeoman, maroon, with silvery reverse; Amber Bright, a handsome amber-bronze variety, with large flowers; Balcombe Amber, a beautiful bright amber; Balcombe Superb, a particularly fine pink variety; Crimson Champion, very distinct, rich crimson; Dauntless, orange-bronze; Dorothy Sayers, large, orange-bronze; Golden Knight, bright golden-yellow; Hope Valley, lilac-pink; Joyous, pink, shaded with apricot; Mayford Triumph, scarlet-bronze; Royal Flare, graceful, orange-scarlet; and Tornado, bright red.

Lawns: Their Construction and Repair

By R. B. DAWSON, M.Sc., F.L.S., F.R.H.S.
(Director, St. Ives Research Station, Bingley, Yorkshire)

THE LAWN TRADITION IN BRITAIN IS FIRMLY ESTABLISHED. FEW GARDENS are without an area of short-mown grass and there is no doubt that, apart from its utilitarian value, a good lawn determines the character of a garden. It forms an important feature in landscape architecture. Many a lawn, however, is of poor quality, sometimes because of a mistaken idea that being only grass it will look after itself and sometimes because it is ill-treated or even over-indulged. To make turf that is consistently good throughout the year is indeed difficult but positive work and the application of certain well-defined principles can produce some remarkable achievements.

During the war the British lawn in general had a rough passage. Shortage of time and diversion of energies elsewhere often meant that the lawn received a minimum of mowing and general attention, while in some circumstances there was complete abandonment. In other instances the lawn was dug up and called upon to grow crops of vegetables over several years. It is perhaps fitting, therefore, that the attempt be made to describe some of the operations likely to be required for effecting restoration.

First of all let us consider the case of the lawn that has been used for food growing during the past few years. Most people will be anxious to restore this as quickly as possible, but there is still a need for food growing. Those wishing to take further crops may, instead of seeding in spring, postpone restoration by sowing during late summer, or, if they wish, leave the work until winter, when the site may be turfed.

Late April or early May are good times to sow because this gives some spring weather for cleaning the land. Spring seeding on the lighter soils or in the drier parts of the country is not always successful. For late summer sowing, combined with cropping, the plan should be to grow quick-maturing crops, for example, early potatoes, salad crops, and perhaps early carrots, peas, and so on, the aim being to have these away by the end of July or early part of August. These crops will benefit by good preparation, comprising thorough digging, incorporation of organic

manures and supplementary artificials. Even if cropping is not done these preparations should be made. If liming was carried out for the cropping programme it should not be repeated unless some special need is indicated since the finer turf grasses thrive best under lime-deficient conditions. Good treatment at this stage is well worth while because the lawn, once established, will be down for many years and the opportunity may not arise again.

On land where bad draining is known or suspected—and most lawn-owners will have gained some prior knowledge on this point—the cultivation work should be preceded by introducing a suitable system of drains in accordance with the contours and shape of the site.

During the course of the summer months, the land should be kept clean of weeds by inter-row hoeing so that when the crops are removed the land is in reasonably clean condition. Those not cropping, but concentrating on re-establishment by late summer can keep the hoe moving more easily.

During the final preparation of the soil for seeding, breeze or sand, and organic materials like peat may be worked into the surface on heavy soil. On light land organic matter should be dug in. By successive rakings, rollings, and hoeings, a surface free from ridges and having a fine tilth should now be produced, overlying a firm soil-bed. A very good time for seeding is about the middle of August in the north but it is safe to sow during early September in the south.

There are two main types of seeds mixtures commonly used for lawns, namely, those containing perennial rye grass and those without this species. Rye grass mixtures are of course cheaper and quicker off the mark but do not give a fine turf. Under certain conditions, for instance, where the lawn is required purely as a playing-ground for children, or as a drying lawn, a rye grass mixture would be adequate. But for a really good ornamental lawn a more expensive mixture without rye grass should be used and experiments have shown that an excellent turf can be produced from a mixture of:

- 7 parts Chewing's fescue
- 3 parts Browntop or bent.

Both these seeds come from New Zealand. Unfortunately, at the moment Browntop is rather scarce owing to import restrictions. The seeds should be sown at the rate of one and a half ounces per square yard and should be lightly raked into the surface; this should be done when the surface is dry,

and the top is finished off by patting down or applying a light roller; deep burying should be avoided.

Having gone to a great deal of trouble to prepare the seed-bed and to get it free from weeds the lawn owner should use nothing but the best seeds—and by this is meant seeds of good germinating capacity and free from weed seeds, likely to establish themselves in the sward. Conversely, expensive seeds should not be wasted on an ill-prepared seed-bed. Needless to state, sowing should be done uniformly and the inexperienced will prefer to divide the seeds into several lots and to cross-sow.

Under favourable conditions germination takes about five days and growth will be rapid. At the age of two or three weeks trouble from "damping off" may be experienced and it is a wise precaution to water the sward carefully with a solution of Cheshunt compound when the seedlings are about half an inch high. It is better to do this before the occurrence of "damping off" than to attempt to cure it later.

In spite of care in preparing a clean seed-bed a few annual weeds like garden chickweed and groundsel are likely to make their appearance, but regular mowing, to which the lawn will be subjected in due course, will result in their elimination.

The first operation on the young sward should be light rolling and when the grass has reached a height of about one and a half inches careful topping with a well-sharpened lawn mower may then be carried out. This may be repeated once or twice during the autumn but on no account should the grass be cut very short. Having done this the lawn will doubtless withstand the winter without further clipping but would benefit by a light compost dressing about November and again in March as a protection and preliminary to treatment the following season.

The other method of establishing a lawn on a site that has been used for cropping, or for that matter on a quite new site, is by means of turf. Turfing work is a winter job, often adopted because it can be carried out during a season of the year when the gardener is less strenuously employed, but it is desirable that the work be completed before the turn of the year. This method entails the purchase of turf ready cut in pieces which may be one foot square, one foot by two feet or one foot by three feet. Much of the turf offered at present is rough turf that has not been prepared in any way and unless exceptionally good is likely to cause trouble in laying. If at all possible, turf that has received some pre-treatment by way of mowing, rolling, and manuring, should be purchased.



*A garden in Buckinghamshire, where a pleasant grass walk
enhances the flower borders*

Photo: Cornish Teas & Seeds Ltd.



Photo: Sutton & Sons Ltd.



Photo: Camera Trench Seeds Ltd.

Top left: A beautiful sweep of wood-free lawn at "Little Birches", Tilford, Surrey

Top right: At "Cloheen", Fleet, Hampshire, the lawn sweeps up to the house

Bottom left: A view across the lawn at "Abbotswood", Stow-on-the-Wold, Gloucestershire

Above: Formal flower-beds have been cut into this well-kept lawn and garden at Watford, but the lawn is the dominating feature

A garden in Coppice Lane, Reigate, Surrey, demonstrating the value of fine turf as a setting for the house and herbaceous border



Photos: Sutton & Sons Ltd.

Four stages in lifting and re-laying turf

Top left: Cutting into suitably sized turves with the "half moon" cutter

Left: Lifting and rolling turf—3 ft. by 1 ft. sods

Lower left: Preparing a seed- or sod-bed

Below: Laying down turf. Note forward direction of working, i.e. facing unturfed soil



LAWNS: THEIR CONSTRUCTION AND REPAIR

The sods should be about an inch and a quarter to an inch and a half thick and should be uniform. Preparations for turfing should roughly follow the lines laid down for seeding, although a very fine tilth is not important. There should be a firm bed, loose on the surface, and the operator should work in one direction, standing on planks to avoid damage to the turf, facing the unturfed part and with his back to the part completed. The sods should be packed closely together and bonded. Having completed the laying, the whole area should then be dressed with sand, which should be worked into the depressions and crevices as the first stage to inducing a true level. This may be followed by a light compost dressing and in due course the turf should be carefully rolled but not so much as to over-compress it. The following spring such turf will respond well to manurial treatment, and further top-dressing with sand or sandy compost may be done as the next stage in producing trueness of surface. Regular mowing would then begin in the spring.

Reference must now be made to many lawns that have been neglected during the past few years. Many fall into this category, their owners having had little time to care for them. Such lawns are generally poverty stricken, poor in colour, interspersed with weeds, and perhaps matted on the surface. Sometimes digging up and reseedling is the cheapest and soundest course to adopt. If restoration is decided upon a good preliminary is to rake the lawn thoroughly, tearing out the dead mat, but not so vigorously as to destroy useful grasses. A spring application of a compound fertilizer will make a remarkable difference, and once the grass is more vigorous steps may then be taken to dispose of the weed population.

Turf weeds fall roughly into two groups, namely, rosette weeds (like the plantains, daisy and caryophyllus) and creeping weeds (like clover, pearlwort, and yarrow). Weeds in the second group are more difficult to remove than those in the first and much good can be done by mechanical work like raking and brushing.

Lawn sand is the time-honoured mixture for weed control. The results can be exceedingly good given warm sunny weather following application. Strong mixtures may be used for spot treatment or weaker mixtures broadcast over the surface and repeated at intervals. A well-known mixture for home preparation is one consisting of:

- 20 parts by weight of sandy soil or compost
- 3 parts by weight of sulphate of ammonia
- 1 part by weight of calcined sulphate of iron.

This may be broadcast at the rate of four ounces per square yard over the surface when there is prospect of sun—but avoiding drought—and repeated on four or five other occasions during the growing season.

The lawn sand type of weedkiller depends largely on a corrosive action on the leafage but in the years since the end of the war a new method of control for lawn weeds has come to the front. It involves the use of growth-regulating substances (sometimes likened to hormones) that are derivatives of phenoxyacetic acid. Two of them are outstanding, being known variously for short as M.C.P. or M.C.P.A. and D.C.P., D.C.P.A. or 2:4 D. These chemicals at low doses exert a selective action by which many dicotyledonous plants are killed, while monocotyledonous plants (like grasses), being resistant, survive.

Much experimental work with M.C.P.A. and 2:4 D has been carried out at St. Ives during the past four years and a great deal of information accumulated. This has shown that turf weeds vary in their response, and in the paragraphs below is set their susceptibility as at present known.

1. **VERY SUSCEPTIBLE**.—The following weeds are usually eradicated by one treatment under favourable conditions:

Catsear, Creeping Buttercup, Crepis, Hawkbit, Hawkweed, Lady's Mantle, Plantains (Broad-leaved, Hoary, Ribwort, Sea and Buck's-horn or Starweed), Sea Pink, Selfheal, and Sheep's Sorrel.

2. **MODERATELY SUSCEPTIBLE**.—These weeds *may* be eradicated by one treatment but sometimes repeated treatments are necessary:

Bedstraw, Bird's Foot Trefoil, Clover, Daisy, Erodium, Dandelion, Mouse-ear Chickweed, Pearlwort, Sea Milkwort, Silver-weed, Yellow Suckling Clover.

3. **RESISTANT**.—Several applications are usually necessary to obtain anything like complete control of these weeds:

Yarrow, Woodrush.

4. **VERY RESISTANT**.—Moss.

There is a wide range of these selective weedkillers at present on the market and they are supplied either as concentrated solutions or emulsions and as powders. In general liquid applications are more effective than powder. The best time to apply the weedkillers is when growth is active, that is, normally, in the spring (May to June), but good results have also been obtained in September, although filling in of the grass is less likely to happen completely at that time of the year than in the spring.

LAWNS: THEIR CONSTRUCTION AND REPAIR

It is advisable to apply a fertilizer dressing a week or ten days before using the selective weedkillers. This makes growth more active and the weeds more susceptible but it also encourages subsequent filling in of the grass.

Liquid preparations are best applied as a fine spray at the rate of one gallon of diluted liquid to fifty square yards, but on large areas lower amounts of water are satisfactory provided suitable apparatus is available. The selective weedkillers are powerful and even in minute doses may affect flower and other plants. A still day is, therefore, necessary, and drift of the spray to other plants and crops should be avoided. The vessels used for diluting the weedkillers should not be used for watering other plants without thorough washing.

Weeds are often associated with earthworms. Whilst worms may do a little good by aeration their casts make good turf production almost impossible. Eradication with lead arsenate powder at the rate of two ounces per square yard is commonly practised in late spring and early autumn. The worms die below the surface and the material is usually effective for five years.

Some reference must now be made to turf areas completely abandoned during the past few years. In these cases there will, of course, be a tall, tangled mass of grass, perhaps studded with taller weeds like thistle and ragwort, since the common lawn weeds are usually smothered under these conditions. The first step is, therefore, to remove this tangled growth. This requires much hard work with the scythe, shears, or motor-driven reaper. Sometimes good results can be had by burning off under dry conditions in March. When this has been done the next thing is to rake, roll, and top-dress in the spring with compound fertilizer followed by a good sand dressing to prepare the surface. Regular mowing should then commence, care being taken not to mow too keenly at first. Abandoned lawns are often invaded by moles and they should be destroyed by using worms baited with red squill powder or by blowing cyanide dust into the runs.

Verges and banks often present problems in the garden. They should be treated on similar lines to other areas referred to above. Good broad verges are much to be preferred to narrow ones and these areas should receive as much care in preparation as the main body of the lawn. In making banks the mistake is often made of leaving an inadequate depth of soil, and this point is worth attention if returfing or reseedling is to be

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carried out. In gardens that have been neglected during the war some attention should also be paid to overhanging trees and shrubs. In industrial areas much deterioration results from the drip of acid-laden moisture.

Several important matters of general principle in lawn maintenance may here be stressed. For instance, over-rolling is a mistake; it is often adopted in an endeavour to get a true surface so that the mower will cut uniformly. Some rolling, especially in the spring, is, of course, desirable, but to obtain a true surface the method of top-dressing with sand and sandy compost is preferable. Then, mowing should always be carried out regularly, not by the day of the week, but in accordance with the needs of the grass. Again, lawns that have been manured, cut, and occasionally rolled for a period often become hide-bound and much improvement can be effected by a system of aeration using a hollow-tined fork or one of the special machines devised for the purpose.

The ideal lawn should be weed-free, uniform in texture, density, and colour, which means that it must be composed of grasses that blend and do not form a patchwork. Freedom from pests and fungal disease is important and no lawn can be clean and uniform if infested with worms. Some degree of drought resistance and a hardness fit to resist wintry conditions are both desirable. Finally the lawn should feel resilient and look good at close quarters or when viewed as one feature of the whole garden. The ideal is, indeed, exacting but its attainment can form a lasting and all-absorbing study for the lawn owner.

EDITORS' NOTE.—*Acknowledgment is made to Messrs. Sutton and Sons, Ltd., and Messrs. Carters Tested Seeds, Ltd., for permission to reproduce certain illustrations. The remaining photographs have been provided by the Board of Greenkeeping Research which maintains the St. Ives Research Station. It is not connected with any commercial concern, being a completely independent, non-profit making organization.*

Choice Hardy Plants

By THOMAS HAY, C.V.O., V.M.H.

THE PERIOD BETWEEN THE TWO WORLD WARS WAS A NOTABLE ONE FOR ALL interested in the introduction of new species of plants. Comber had been to Chile and Ward to China and Tibet and for the first time that little-known country Nepal was searched by two native-trained collectors with good results, and Kashmir also enriched our gardens with many new species.

From Burma comes the beautiful *Primula szechifolia*, and many new annuals reached us from South Africa. When we make a survey of the new additions that reached us between 1915 and 1939 the tree, shrub, and Alpine enthusiasts had the lion's share, and those interested in Rhododendrons the greatest number of new species of any single genus. This result is typical of most plant-hunting expeditions; the number of border plants of garden merit is generally small. Nature has been stingy in the provision of showy border plants, and an examination of any garden containing a good collection will show the number of true species is certain to be fewer than those of garden origin. Their scarcity in Nature is counteracted by the great number of new varieties our enterprising plant breeders, both at home and abroad, never fail to provide. It is true that they seldom raise a plant that remains a lasting memorial to their skill and enthusiasm, but there are notable exceptions. Those that we term "florists" flowers, and these include such things as Delphiniums, Asters, Carnations, Dahlias, Chrysanthemums, and several others, have but a fleeting existence and seem to resent being propagated vegetatively over many years, and new races from seed are necessary to keep them healthy and vigorous.

There is also the great fascination of raising plants from seeds that have been carefully hybridized; it is a venture into the unknown where chance rules and man's love of a gamble can be practised without hurt to himself, church, or state.

We had but a short period to test out the many new plants that reached us from the wild between the two wars, but we recall quite a number that had made good and that are likely to prove abiding. Of all the plants introduced since 1914, I place *Meconopsis betonicifolia* very high on the list, as the Blue Poppy is appreciated everywhere. It was known to botanists long before seeds were collected but no botanical description

did it justice. It is a great plant when seen in its right setting and in a soil that makes it retain its tone of intense blue. There are several forms of the plant in our gardens and the one to secure is the true perennial form that can be increased by division; and it has the merit of being just as lavish in producing seeds as are the forms that generally perish after flowering.

Another very desirable species introduced during the First World War is *M. quintuplinervia*. This is also a good perennial, less free in giving of its seeds, but can be increased rapidly by division.

In 1934 there was shown an Aconite under the name *Aconitum Wilsonii*, Barker's variety. This is a plant of great merit, a fine shade of blue and of stout, erect habit. It was honoured by the Royal Horticultural Society with the coveted Award of Merit.

Another notable introduction is *Kniphofia Galpini*, dwarf in habit, very free-flowering; it has been said of it that it is as near being the perfect border plant as any we are likely to see.

The introduction of *Aquilegia longissima* was another noteworthy addition to our gardens. Its pleasing shade of yellow and its spurs nearing six inches in length and fine glaucous foliage all combine to ensure its future. Our plant breeders have taken it in hand and a variety of colours are now on offer retaining all the charm of the original.

Anchusa Dropmore var., for long was a much-treasured plant in the garden but has now been superseded by the variety *Morning Glory*, a splendid addition to our blue-flowered border plants. For the back row of the herbaceous border *Malva setosa* is to be recommended. It was collected by a member of the Kew staff when botanizing in the Balkans. From Kashmir come two border plants, *Phlomis purpurea*, a fine dwarf species with handsome grey foliage and massive heads of pink flowers. It has not yet taken to our climatic conditions, which is to be regretted.

Nepeta nervosa, an erect-growing two-feet-high border plant of very free-flowering habit and blue in colour is valuable as a front row herbaceous plant.

In addition to the plants already named, many that had been lost and gone out of cultivation again made their appearance in the years between the wars but have proved little more than visitors and refuse to become residents; when we do see them, for many they have all the novelty and glamour of a new species. Notable among these are such plants as *Penstemon Eatoni*, *P. nevadensis*, *P. centranthifolius* and others of great beauty.

CHOICE HARDY PLANTS

Some lovely species of *Astragalus* have also made a brief stay in our gardens but have defied the expert to keep them there. In this category many others might be named but we leave them to the plantsman who delights to give battle with the difficult and intractable plant and wish him success.

In looking over the list of the hardy border plants that since the end of the war have been laureated by the Royal Horticultural Society's many Committees, the raisers of new varieties of Dahlias, Chrysanthemums, Carnations, Delphiniums and others have been given many awards. All the plants mentioned have either joint committees or independent societies to look after their interests. Against these the number of awards given to new species makes a poor showing, and the number of new plants that have been honoured is less than the awards given to old introductions the merits of which we have taken long years to appreciate. Very prominent among these is *Coreopsis verticillata*, which has been placed among the aristocrats of the hardy plant world and given the Award of Garden Merit. It is perhaps one of the most perfect of all the yellow composites, elegant in habit, foliage, and blossom, easy to grow, requires no sticks or string to keep it in place. Another yellow composite to be honoured is *Helianthus orgyalis*, an old resident of our borders and a fine back-row plant.

Desirable also are *Lysimachia Ephemenum*, more common in our Scottish gardens than in the south, an erect-growing border plant with long spikes of whitish flowers and with glaucous foliage; *Baptisia australis*, with long spikes of dark-blue lupin-like flowers, very handsome and desirable and a very old resident of our gardens; *Hosta tardiflora*, a late-flowering species, dwarf, neat, and showy, delighting in a damp, shady spot; *Achillea filipendula*, an erect-growing border plant with flat heads of yellow flowers.

One of the most interesting plants that have been honoured since the war is a member of the British flora. It is not often one of our native wild flowers attains to such distinction. *Melittis Melissophyllum* is recorded from a number of counties but it is nowhere in great numbers; when met with, no doubt, the desire to transfer it to our garden would be difficult to resist and this probably accounts for its rarity. This is one of our most handsome native flowers, growing about twenty inches high. Its richly coloured rose and white flowers are very showy; a lovely vase was shown at the R.H.S. from the Royal Gardens, Kew, and much admired. It might

be mentioned that this plant can be purchased cheaply so there is no need to root it up when found in its native habitat.

Rhazya orientalis is another old resident that has been given the Award of Merit, but a good many plant lovers think it hardly earns it. *Smilacina racemosa* is another old plant and is related to the well-known Solomon's Seal, tall-growing when given a wet spot, with spikes of white flowers which are fragrant. *Stachys grandiflora* is a neat-growing plant with showy trusses of rose-coloured flowers. A few others that are certain to prove less abiding than those named are *Primula Stuartii*, *Alstræmeria violacea*, and *Dimorphotheca Barbertiae*, all desirable but likely to prove difficult in our climate.

Since the end of the war new species of border plants from the wilds and notable variations from the type raised at home have been few in number.

Thalictrum diffusiflorum is a very charming introduction from the Himalayas, the foliage is as excellent as that generally found in all the family and the flowers are lavender-violet. It is similar to the lovely *T. Chelidonii* but may prove easier to grow than that distinguished member of this fine genus. *Tiarella Wherryi*, a neat-growing American plant, promises to rival the well-known and popular *T. cordifolia*. *Salvia Pitcheri* var. African Skies was raised in South Africa but *Salvia Pitcheri* is a native of New Mexico and was introduced in 1873. This new variety is a very beautiful plant and should it prove hardy is certain of a great future. The flowers are carried in long racemes and are Cambridge blue. This is a notable introduction and its distribution is awaited with interest by many plant lovers. Seeds of *Salvia hæmatodes* have been generously distributed from the Wisley Gardens and this handsome *Salvia*, easy to grow and retain, has become very popular. It carries a heavy crop of blue flowers on long dainty sprays.

Verbascum Broussa has been described as a pillar of cotton-wool studded over with flat yellow flowers. This curious plant never fails to attract and is now easily obtainable. *V. densiflorum* is another handsome species. *Scutellaria incana* is another very desirable plant that has not yet come into its own. It grows about two feet in height and its annual growths are well-laden with dainty blue flowers. It is still among the scarce and rare new plants.

Among those of garden origin there are a few that promise well. *Chrysanthemum maximum* Wirral Supreme and Wirral Pride will be largely



Paeonia Solange

A handsome pale pink herbaceous Paeony, most effective when boldly massed



Meconopsis betonicifolia

Bailey's variety, with *Irises* and *Primulas* in the background;
needs a cool air on the fringe of a wood to be seen to perfection



Above: *Anthemis tinctoria*, a good border plant, excellent also for cutting

Left: *Romneya Coulteri*, the White Californian Poppy, at home either among shrubs or in the herbaceous border

Below: *Sedum spectabile* at Port Lympne. An ideal plant for mixed borders; needs no staking





*Modern Bearded Irises.
No June garden is complete without a selection of these beautiful varieties*



*Above: Iris Elmohr
Right: Iris Orloff*





Physostegia virginiana var. *Vivid*, "The Obedient Plant", with spikes of rose-pink flowers



Opposite: *Tiarella cordifolia*, "The Foam Flower", well-placed in an ample pocket in the rock garden

Right: *Eremurus elwesianus*, an aristocrat among herbaceous plants; thrives in chalky soil

Below left: *Aconitum Wilsoni*, Barker's variety. A rich blue Monkshood

Below: Good varieties of *Lupinus polyphyllus*





Meconopsis quintuplinervia, "The Harzbell Meconopsis". A graceful plant for the fringe of the woodland



Above: *Aquilegia longissima* with four-inch golden spurs

Left: *Stachys grandiflora*. A purple species, one to two feet high



Aster Peace

*One of a new race of large-flowered Michaelmas Daisies,
a clear shade of blue*



Melitus Melissophyllum
A rare British plant of great
merit for the mixed border or
large rock garden



Phlox maculata
A handsome species with columnar
flower panicles



Verbascum densiflorum: An aristocratic Mullein for the back of a mixed border



Echinops Ritro: A noble Sea Holly for the front of the border



Left: Helianthus Meteor
The golden-yellow flowers
are excellent for cutting

Below right: Coreopsis
grandiflora var. *Sunburst*
A recent novelty with
enormous flowers

Below: Oriental Poppies
Their rich colours are in-
dispensable in the summer
border





*Opposite: Aster
Harrington's Pink
A new shade of colour in
Michaelmas Daisies*

*Left: Acanthus spinosus.
The spikes of flowers are
purplish, reaching three feet
in height*

*Below: Echinacea, The
King
A plant for the middle of
the border, with black
"cones" and reddish-purple
florets*



*Aster yunnanensis var.
Napsbury
A new introduction, suitable
for the border or for cutting*







Ailanthus glandulosa

The deep-crimson plumes reach a height of three feet

CHOICE HARDY PLANTS

grown by those who specialize in growing for market. They both carry double white flowers on long stems. *Coreopsis* Badengold and *C. Sunburst* are improved varieties of *C. grandiflora* and are very showy plants. *Aster yunnanensis* var. Napsbury has very rapidly become a popular plant with its lavender flowers held on sturdy, erect stems.

Elegant and unusual is *Phlox maculata*, a lilac species similar to our popular *Phlox decussata* but of more columnar shape; when wider known it will be included in the connoisseur's border. The dwarf form of the Obedient Plant, *Physostegia virginiana* var. Vivid is not only interesting but decidedly ornamental and flowers over a long period.

Then there is that lovely member of the Poppy family, *Romneya Coulteri* with its enormous white flowers offset by a boss of golden anthers. It deserves a place beside its more gorgeous relations—the many varieties of *Papaver orientale*.

Where the soil is not too acid the majestic spikes of Eremuri lend great dignity to a border. *Eremurus Elwesianus* and the golden *E. Bungei* are two notable members of this aristocratic genus. But we must not pass over the commoner plants, so essential to give variety of colour and a long lasting display. *Anthemis tinctoria*, the many new forms of Bearded Iris, the spiny yet handsome *Echinops Ritro*, the more refined members of the Sunflower family such as *Helianthus Meteor*—all have their place. *Acanthus spinosus* delights us as much with its foliage as with its flowers, and among the Astilbes, the varieties Rhineland, Fanal, and Granat will find many admirers. Nor must we forget the autumn days and the wonderful new Michaelmas Daisies which have appeared in recent years. *Aster Peace* with its very large lavender-lilac flowers and *A. Harrington's Pink*, are two of the best of the recent introductions.

My remarks have been strictly confined to plants that are likely to survive the rough and tumble life that the good border plant can stand and enjoy without giving trouble in the way of protection from frosts, droughts, and excessive rainfall but there are many others of recent introduction, choice Primulas, Gentians, Meconopses, and others that will make great appeal to the plant lover and that will give much pleasure and satisfaction to those who can give the time and care their successful cultivation will demand.

Roses:
Their Development during the past Half-century

By GEORGE M. TAYLOR

THE PAST HALF-CENTURY HAS WITNESSED A GREAT CHANGE IN THE CHARACTER of the Roses that adorn our gardens, and during that period we have seen the passing of many old favourites whose disappearance is much regretted by those who grew and loved them. First of all, there were the exquisite old Tea Roses, the ancestors, indeed, of much that is best among our modern sorts, and whose passing is deplored by those who appreciated not only their beauty and delicacy but their value for breeding purposes. Various crossings between 1840 and 1890 between the Yellow Noisette-Teas and the Pink Bourbon-Teas gave rise to the most incomparable Roses ever produced. After that date, however, they gradually lost their typical qualities by crossings with the new Hybrid Teas which they had helped to make, and today the typical Tea Rose has practically disappeared from general cultivation.

During the half-century mentioned, 1840-90, the Hybrid Perpetuals completely dominated the Rose garden until they were in the course of time replaced by their derivatives, the Hybrid Teas. The latter began with the introduction of *La France*, raised by Guillot in 1867. Others followed, but it was not until 1884 that it was recognized as one of a new class, quite distinct from the stately Hybrid Perpetuals. Rosarians of those days did not quite grasp the significance of this new group, and it was not until 1895, in which year Madame Abel Chatenay and Mrs. W. J. Grant appeared, that Hybrid Teas really began to make their influence felt. At the beginning of this century we had three popular groups of dwarf Roses, namely Teas, Hybrid Perpetuals, and Hybrid Teas. But slowly the first two groups were displaced, and in due course they gradually disappeared from the average garden where Roses were grown.

The Teas, Hybrid Perpetuals, and Hybrid Teas, were born in France, and it was in that country that the foundations were laid of the beautiful varieties we cultivate today. The Pernet Roses, too, originated in France, the first of that class, *Soleil d'Or*, being sent out in 1900. These Roses caused the Hybrid Teas to change their original characters owing to their

hybridization with the new Pernet Rose, and that work began in 1905. To begin with, the influence of the Pernet Roses on the Hybrid Teas was very slight, but gradually year by year the Pernet characters permeated the Hybrid Teas in a steady progression, so that nowadays it is rare to see an original Hybrid Tea among the new Roses without a trace of the Pernet influence. That fact is worth noting, because the Hybrid Teas have completely lost their original character. The class we know today as the Hybrid Tea is a mixture and embodies a long and varied ancestry in its constitution. As it now exists it is wrongly designated, and the time has actually arrived when some new scheme of nomenclature and division is absolutely necessary.

The confusion was accentuated with the arrival in 1924 of what are now called the Poulsen or Hybrid Polyantha Roses. In that year the Danish breeder, Svend Poulsen, gave us *Else Poulsen* and *Kirsten Poulsen*, both of which originated in a cross between the Poly-Pompon Rose, "*Orleans Rose*", and the Hybrid Tea "*Red Star*". Others followed and in 1932 with the advent of *Karen Poulsen*, with its dazzling scarlet single flowers which defy description, the popularity of this new class was assured. The present tendency is that this class will soon become incorporated with the Hybrid Teas, for in 1935, with the introduction of *Anne Poulsen*, a move began away from the typical Poulsen Rose. A similar type appeared in 1939 in Poulsen's *Copper*, and some of the later introductions such as Poulsen's *Pink* and Poulsen's *Yellow* are similar in character. This class, as exemplified by such sorts as *Karen Poulsen*, has gained a great and well-deserved popularity.

Broadly speaking, our modern dwarf garden Roses are at present confined to two classes in general favour—those we call the Hybrid Teas and the Hybrid Polyantha, or Poulsen Roses. The latter class has now almost ended the planting of the older, and dwarfer, Poly-Pompon sorts such as *Orleans* and *Coral Cluster*. They are still used for bedding work but not so extensively as hitherto.

If the foundations of our modern garden Roses were laid abroad, particularly in France, the upbuilding has been worthily carried on by British breeders, and most of the esteemed and popular varieties in currency today were so raised. France, Spain, Holland, Denmark, Germany, Australia, and the United States, are all countries which have raised, and are still raising, excellent Roses, but our home breeders may be said to be pre-eminent in the production of new Roses. The work was

suspended during the war years, but some fine sorts are now being introduced again.

The Hybrid Teas, now a very sophisticated race, are still the most popular. It is a long cry from *La France* to such varieties as *Mrs. Sam McGredy*, *Phyllis Gold*, *Lady Belper*, and *Charles Mallerin*. The infusion of *Pernet* blood has transformed the class, and we now have a range of colours undreamt of by growers half a century ago. And, moreover, what a change has taken place in the flowering period of our modern Rose! The magnificent Hybrid Perpetuals bear their impressive blossoms only for a very limited period; so, too, did the immaculate Tea Roses. But many of the best Roses grown today are just as perpetual in blossom as the climate will allow, and in a mild winter it is nothing unusual to have flowers at Christmas, indeed, in mid-December last, *Karen Poulsen* was a mass of flowers throwing a dazzling, crimson colour into a dismal winter day.

I have not the space here to deal with all the Hybrid Teas, but I mention twenty-four sorts which ought to find a place in every garden. They are all well-tried kinds. They are given in alphabetical order in order to avoid invidious distinction. The following Roses are primarily for general garden cultivation, and not for exhibition although many of them are often included in selections for that purpose:

Barbara Richards	maize-yellow, flushed rose
Betty Uprichard	orange-pink
Christopher Stone	crimson, shaded violet
Comtesse Vandal	reddish-copper, edged pale pink
Crimson Glory	deep velvety crimson
Emma Wright	pure orange
Ena Harkness	velvety crimson
Etoile de Hollande	deep red
Golden Dawn	pale lemon-yellow
Lal	salmon-pink, shaded white
Lady Sylvia	flesh-pink, yellow base
Madame Butterfly	pink, shaded apricot
Margaret Anne Baxter	white
Mrs. Henry Bowles	glowing rose
Mrs. Sam McGredy	coppery-orange, splashed red
Mrs. Van Rossem	orange, apricot, and yellow
McGredy's Sunset	yellow, shaded gold
McGredy's Yellow	yellow

ROSES: DEVELOPMENT DURING THE PAST HALF-CENTURY

Picture	clear rose-pink
Phyllis Gold	golden yellow
President Hoover	orange and gold
Shot Silk	orange-rose, shaded yellow
Sir Henry Segrave	primrose-yellow
Violinista Costa	scarlet, pink and gold

CLIMBING HYBRID TEAS

I give a list of a few of the best Climbing Hybrid Teas, and keep them distinct from the Hybrid Wichuraianas or Ramblers.

Madame Grégoire Stacelin	pale coral, shaded pink
Allen Chandler	vivid scarlet
Clg. Madame Edouard Herriot	vivid terra-cotta
Clg. Etoile de Hollande	flushed rose
Clg. Madame Butterfly	pink, shaded apricot
Clg. Caroline Testout	bright, warm pink
Clg. Paul Lédé	rose, shaded yellow
Clg. Madame Abel Chatenay	carmine-rose, shaded salmon

OTHER GOOD CLIMBING ROSES

Madame Alfred Carrière	white
Gloire de Dijon	buff-salmon, shaded yellow
Mermaid	single, sulphur-yellow
Clg. Cramoisis Supérieure	deep crimson
Souvenir de la Malmaison	clear flesh
Zéphirine Drouhin	rose pink

A noteworthy climbing variety which recently received an Award of Merit from the Royal Horticultural Society is Lawrence Johnston, a companion seedling to Le Rêve, a very beautiful but little-known climber. Lawrence Johnston has semi-double, richly coloured yellow flowers.

RAMBLING ROSES

Excelsa	bright scarlet
Minnehaha	deep pink
Albertine	coppery-salmon
Chaplin's Pink Climber	bright pink
Paul's Scarlet Climber	scarlet
Easlea's Golden Rambler	yellow, splashed crimson
Dr. Van Fleet	soft pink

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Thelma	coral pink
Sander's White	white
François Juranville	deep fawn-pink
Mary Wallace	rosy-pink
American Pillar	clear rose, pink eye

HYBRID POLYANTHA ROSES

Anne Poulsen	velvety red and crimson
Van Nes	rich carmine
Karen Poulsen	intense scarlet
Orange Triumph	orange-scarlet
Rosenelf	silvery-pink and red
Betty Prior	dark carmine
Else's Rival	glowing pink
Salmon Spray	salmon pink
Poulsen's Yellow	rich yellow
Kirsten Poulsen Improved	bright red
Donald Prior	scarlet, flushed crimson
Yvonne Rabier	white

Promising new sorts in this section are Fashion, an American variety with lovely salmon-coloured flowers; Our Princess, rich crimson, semi-double flowers; and Goldilocks, another American variety. It has rich yellow flowers, and the plant makes a nice bush and flowers freely.

DWARF POLYANTHA ROSES

Paul Crampel	deep orange red
Cameo	flesh-pink
Little Dorrit	coral-salmon
Golden Salmon Superior	rich, golden-salmon
Ellen Poulsen	cherry-rose
Coral cluster	soft coral-pink
Edith Cavell	crimson with white eye
Gloria Mundi	glowing orange
Eblouissant	scarlet-crimson
Ideal	dark scarlet
Cecile Brunner	blush-pink with yellow base
Perte d'Or	yellow, orange centre

These selections give a good representation of the best of the classes that are generally popular in gardens today, but they by no means

exhaust the varieties that are still in cultivation. There are hundreds of Hybrid Tea varieties alone, and in addition there are the Hybrid Perpetuals and the old Tea Roses, both of which have still many admirers.

Then we have the old, old Roses such as the Alba, Damask, Provence, Gallica, Bourbon, and others. Many of these old Roses are very charming and they are in great demand now among discriminating Rosarians. The old China Roses, too, are very beautiful, and perpetual in their flowering character. The Striped Roses of long ago, such as York and Lancaster, Cottage Maid, Tricolor de Flandre, and Commandant Beurepaire, are very quaint and remind one of the bizarre Carnations of the old florists. The Moss Roses, so long neglected, are again in favour. Grown as shrubs, and left alone except for an occasional thinning out of old wood, they are very sweet. The Old Purple, for example, with its purple-blue-tinted flower, will grow into a tree. The Musk Roses have many admirers, and so have the Hybrid Rugosas, of which Conrad F. Meyer and Rose à parfum de l'Hay are examples, the latter with its rich crimson flowers being one of the most fragrant of all Roses.

The genus *Rosa* is rich in species, many of them of the highest order as decorative subjects for the garden, indeed they are magnificent flowering shrubs. One of the best known is *R. Moyesii* with its single flowers three inches in diameter, of a sparkling ruby-red colour that is difficult to describe. Less known, but very lovely species are *R. Andersonii* and *R. hispida*. The first is probably of hybrid origin although it is classed among the species, and it is one of the prettiest Roses imaginable. What a glorious sight it is in June when covered with its deep rose salvers so profusely borne that the foliage is obliterated! It makes a dense bush and attains a height of three feet. *R. hispida*, from Siberia, is one of the first to flower. It is at its best in my garden in early June, and is very lovely with its soft yellow, anemone-like flowers, followed by a crop of black hips in autumn. Lovely yellow species are represented by *R. Hugonis*, which makes a fine specimen bush up to eight feet high; *R. Ecae*, rich buttercup-yellow; *R. xanthina*, fragrant single yellow; and *R. ochroleuca*, the single yellow Scotch Rose, and probably the most beautiful of all with its deep golden-yellow blossoms. The species are well worthy of study, and interesting collections of them can be seen at Kew, at the Royal Horticultural Society's Gardens at Wisley, and at the Trial Grounds of the National Rose Society.

Modern Roses have an adaptability that was absent in the past, and their

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accommodating character makes them ideal subjects for garden decoration. The old method of growing them in beds is still employed by many growers, but the tendency to use Roses as individual plants is rapidly expanding. It is now realized that a bush that is allowed to develop, in fact treated as a flowering shrub, can be a thing of great beauty and interest and an acquisition to the garden. There are many sorts that are ideal for such work. Any of the strong-growing Hybrid Teas and Hybrid Polyanthas are all capable of being treated as flowering shrubs, and in addition there are many very lovely species. The latter flower but once in a season, but they are very striking in autumn when laden with their highly coloured fruits.

It looks as if there will be a vast change in the methods of Rose-growing in the near future. It is now a fact that fine plants can be had on their own roots—for most sorts root readily from cuttings—and the disadvantages and worries of incompatible stocks will disappear. And we must remember that no shrub will give so prolonged a flowering period as our modern Roses. All over the world interest in Rose-growing increases every year as gardeners fall more and more under the spell of the garden's acknowledged queen.



Lawrence Johnston

Raised by Pernet-Ducher of Lyon by crossing Persian Yellow with a deep chamois-yellow seedling from Gloire de Dijon. It is an early-flowering climber of great charm with rich butter-yellow semi-double flowers.



*Top left: Mrs. Sam McGredy
One of the most esteemed Hybrid Teas, and a grand garden variety*



Top right: Etoile de Hollande

One of the best of the dark crimson Hybrid Teas. A very desirable Rose with many perfections and few faults; fragrant

Right: Shot Silk

A Hybrid Tea of almost perfect habit with delightfully fragrant flowers





Goldilocks

*A new Hybrid Polyantha from America.
Pure yellow clusters of flowers on a dense
bush*

*Right: Moss Rose and Bud
An old-fashioned favourite. Very
sweet and charming in its old-
world serenity*

*Below: Crimson Glory
Hybrid Tea; deep, velvety crimson.
One of the best scented dark reds*



*Below: Karen Poulsen
One of the most brilliant and popu-
lar Hybrid Polyanthas. The scarlet
colour is very striking*





Fashion

A new American Hybrid Polyantha. The colour is an unique salmon-coral, and the flowers are borne in large corymbs.

Right: Moss—L'Abrante
Remarkable for its "mossy"
buds and stems. One of the
best of its class



Left: Victoria
A fragrant Hybrid Tea Rose
of canary yellow colour



Above: Provence
Rosa centifolia
The original Provence, or
Cabbage Rose, light pink
and very fragrant; an old
favourite and still popular

*Right: Moss-
 Crested Rose*
Found growing on a convent
wall in Freiburg, Switzer-
land, in 1827. The flowers
are bright rose-pink, and the
calyx is remarkably fringed
and frilled



Opposite: A bed of Roses,
depicting the massed glory of
delightful flowers



Our Princess

A new Hybrid Polyantha raised by crossing Donald Prior with Orange Triumph. The rich crimson flowers are semi-double



*Above: Charles Mallerin
A new, dark-crimson Hybrid Tea. Very sweet flowers; winner of Clay Cup for fragrance, 1948*

Lady Belper

A new Hybrid Tea with bronzy-orange petals enhanced by lighter shadings; slight fragrance



Shrubs and Climbers for Walls

By FRANCIS HANGER

SINCE THE DAWN OF THE PRESENT CENTURY A REVOLUTION HAS OCCURRED in our gardens due to the introduction into cultivation of innumerable new plants from abroad, the results of quests made throughout the world by explorers. Among many of these beautiful treasures are some tender shrubs and climbers which have been found by experience to thrive most successfully under the sheltering influence of a wall.

The benefits of walls to plant life are twofold. Not only are climbers provided with a means of support, but walls facing various directions create far more favourable growing conditions for shrubs than would be the case if they were planted in the open garden. By the aid of the sunny walls we can gamble with the English climate and plant such luxuries as *Fremontia californica*, *Billardiera longiflora*, *Grevillea rosmarinifolia*, *Veronica Hulkeana*, *Carpenteria californica*, and the orange "Trumpet Flower", *Campsis grandiflora*, better known as *Tecoma grandiflora*. Right at the foot of these warm walls ideal homes will be found for many dwarf-growing plants. The South African *Nerine Bowdenii*, *Amaryllis Belladonna*, the hybrid *Hippeastrum Arkernummi* together with *Schizostylis coccinea* would all be happy under such conditions, but all these are bulbous plants, which reminds me that I am wandering from the title of this article!

The walls of a well-built house covered with climbers of distinction and proportion are indeed a joy. However, a beautifully designed home smothered with too-rampant growers such as *Aristolochia Sipho*, *Clematis vitalba*, *Polygonum baldschuanicum*, or *Vitis Thunbergii* only defeats the architect's good designs. The stately mansion with its noble walls is often seen with too weak-growing or too dwarf-growing climbers planted at its foot. This is the perfect position for that grand evergreen *Magnolia grandiflora* or the more recently introduced *M. Delavayi* which displays its leaves of nearly one foot in length the whole year round.

Low walls of four to five feet in height and especially the position under the drawing-room window with perhaps a maximum of three and a half feet from the ground-level to the window-sill is often chosen to grow some shrub which needs much more headroom. During the summer the plant has to receive constant clipping to enable the owner to view his

No mention has yet been made of the wall facing east, and although not so favourable as either the south or the west walls, a large array of shrubs and climbers will grow admirably against it. Even if this wall be open to the cruel east wind no one need hesitate to plant freely against it. Shrubs will grow much better against any kind of wall than if they were planted in the full open ground with the wind tearing through their branches.

When selecting plants for an east wall, discretion is necessary to choose those which come into flower after April is well advanced. It is well known that many flowers will withstand a few degrees of frost without being spoilt, providing they can thaw slowly. The early morning sun after the frost does great harm to slightly frozen flowers, therefore shrubs and climbers which bloom during the early months of the year should not be planted against the east wall.

Proper cultivation is a first necessity, if success is to be gained in any branch of gardening. "To commence well is more than half done." The soil at the base of the wall, especially the soil around newly built houses, is generally very poor indeed. This usually consists of any rubbish the builder had over, which was used by him to fill in the hole around the foundation of the house, after it was erected. Bricks, cement, lime and stones may be there in quantity. If such is the case the best, indeed the only plan, is to remove the lot, two to three feet deep and three feet wide, and replace the border with good new loam incorporating a generous supply of rotted leaf-mould. This means quite an amount of hard work, but after planting the climbers will speedily repay the owner for the trouble he has taken. In some cases where it will be found necessary to have stone or cement paving near walls, at least eighteen inches to two feet should be left clear at the base for planting. Once established, the roots will find their own way beneath the paving and be perfectly happy.

Pruning a large variety of climbers and shrubs against a wall will need discretion on the part of the operator. Many of the shrubs will need no pruning at all, other than the removal of any dead wood, or overcrowded branches. Those which must be pruned fall into two categories, that is those which flower on the previous year's growth and those which bloom on the current season's wood. The former group should receive attention as soon as the flowers fade, while the latter group can be pruned during winter or very early in the spring. No hard and fast rules can be laid down as to the correct way to prune a shrub. One must aim at obtaining

the maximum amount of bloom in the available space, and not to sacrifice flowers for neatness as so often happens. Generally shrubs look far more natural, produce more blossoms, and look more beautiful when they are allowed to grow away from the wall a little and are not rigidly chopped back annually. Naturally, there are exceptions; windows are made to admit light to the home, and, therefore, these must be kept trimmed clear, water shootings must be free, and certain rank climbers such as vines (species of *Vitis*), *Wistaria*, *Campsis*, the Trumpet Creeper, *Actinidia chinensis*, and similar strong growers are best spurred hard back yearly, before growth commences.

The pruning of *Clematis* is often a problem—when, where, or which plant should be cut hard back. In the first place all *Clematis* should be cut back to within a foot of the ground at planting-time. Arrange to make the cut immediately above a pair of growth buds. The subsequent pruning is simplified by cutting those which flower on the new wood hard back, almost to the ground if it is so desired. This is not a necessity but it would enable the plant to furnish flowers low down on the wall, continuing upwards until the limit of growth is reached. The large summer-flowering *C. Jackmanii*, *C. lanuginosa*, and "Viticella" groups can be given this treatment.

The small-flowering *C. montana*, the unique pale blue almost double like *C. macropetala*, and the late-flowered *C. Rehderviana* (syn. *C. nutans*) with its scented, bell-shaped, nodding flowers, and such varieties are best trained to their supports as well as possible, and each early spring all dead and weak growths may be cut away. This is best done as soon as the buds begin to push.

Clematis Armandi is a strong grower, quite evergreen and has beautiful masses of white flowers during April. Its variety Apple Blossom has a trace of pink in its petals. This type of *Clematis* needs attention as soon as the blooms have fallen; then cut away all dead and weak growths and if it is necessary to cut back rampant shoots they should be pruned to the pair of leaves which has already commenced to produce strong young growths. These will speedily grow and in favourable situations make new growths up to twelve feet in length which will need periodical tying to assure an even distribution of blooms in the following year.

Before we leave this subject of pruning it should be mentioned that evergreens, which are much less numerous than deciduous climbers, are best overhauled during early spring. If pruned, or in the case of Ivies

clipped, at the end of March they quickly break into young growth and do not remain unsightly for a long time.

The planting of climbers against a wall may be carried out at any time of the year, provided the new plants are transferred from pots. Failing this, deciduous plants can be transplanted at any favourable opportunity from late October until the following March. Evergreens from the open ground are best moved early in October, very late in April or early in May. Pay strict attention to the watering of wall plants at all times, and especially to newly planted subjects, and those growing against the wall of the house which has wide eaves overhanging the plants.

There are various means of artificial support for climbers on walls. The best, no doubt, are strong galvanized wires about eight inches apart running horizontally along the wall and held into place with eyelet-holed metal pins embedded into the building. The old method of wall nails driven through strips of cloth made into a loop which holds the branch of the shrub is still a useful one, but cannot compare with the horizontal wire system, where the wall has a continuance of climbers and wall shrubs. Nails, too, tend to loosen the mortar between the bricks, and also mark the latter by chipping. Wire netting stretched tightly over the wall and securely fastened at the ends forms an easy way of covering a wall. Lattice-work of wooden laths has its advantage on certain types of buildings, but these speedily deteriorate unless made of teak or oak. Metal pins with an eyelet head cemented into the wall at intervals are very good for high buildings with heavy shrubs like *Magnolia grandiflora*.

Nature has only provided a very small proportion of climbers with natural means of clinging, and sufficiently strong to support them entirely without aid of any description. Unfortunately these self-clinging climbers do not make a very comprehensive collection, but as they do serve a very useful purpose in places where it is difficult to provide a means of support it would, no doubt, be advantageous to name a few of the best.

For covering very high walls and towers where the plant can ramble at will *Vitis inconstans*, commonly known as *Ampelopsis Veitchii* and by many people as Virginia Creeper, no doubt takes first place. It is most rampant, but during the autumn months the leaves turn to lovely red, orange, and crimson shades before falling to the ground.

The Ivies or species of *Hedera*, although perhaps a little uninteresting are quite hardy evergreens and can be planted to serve a very useful

purpose as a covering for unsightly buildings where nothing else will grow. There are golden and silver varieties of *H. Helix*, the common Ivy.

A deciduous climber which likes a hot sunny wall, *Campsis chinensis* (syn. *Tecoma grandiflora*), is practically self-clinging. It does climb a wall vigorously and unaided, but the main stems are best fastened at intervals. During August and early September the plant is covered with deep orange-red trumpet-shaped flowers two to three inches long. This Chinese plant flowers on the current year's growth and should be pruned hard back.

Campsis radicans, a native of the South Eastern United States of America, hails from the opposite side of the world to the *Campsis chinensis* previously described, but needs the same treatment. It is, however, the hardier of the two, not so spectacular and has smaller flowers.

Hydrangea petiolaris, the climbing Hydrangea, is also deciduous, and is quite a vigorous hardy plant, perhaps more suited for furnishing clear tree-trunks, where it will need no pruning and climb to a height of thirty to fifty feet. The white flowers appear during July, and it is a good plant for north walls. *Pileostegia viburnoides*, from India and Formosa, is an ideal evergreen wall shrub, with lovely foliage and white flowers. It is, perhaps, the best evergreen self-climbing shrub, but it needs a favoured wall and district.

Trachelospermum jasminoides was introduced from China over a hundred years ago and is another self-climbing evergreen with small white flowers. This plant needs a most sheltered position to be seen at its best, but *T. asiaticum* is much more hardy, making a dense wall cover, and it usually flowers freely.

Schizophragma hydrangeoides, as its name denotes, is not unlike the climbing *Hydrangea petiolaris* with much the same habit, but the sepals of its creamy-white flowers are heart-shaped, not round as with the Hydrangea.

There are so many beautiful flowering climbers and shrubs for sunny south and west walls that I find it most difficult to make a small selection without serious omissions. I have already stated that Roses are ideal for these walls, and decided to leave the choice to the reader. The same may also be written of the Clematis; a few have been mentioned, only it might be added that these will flourish on an east wall really well, especially *C. flammula* and *C. tangutica*, while the variety Nellie Moser among the hybrids is outstandingly easy to grow.

To keep this article within the editors' allotted space I have decided

to make a small selection of these plants with beauty and fragrance and leave out those which are rarities, or of botanical interest only.

The North American *Ceanothus* come readily to mind and these beautiful, blue, sun-loving evergreen shrubs are very suitable for a warm wall. All are not fully hardy but with wall protection they grow very quickly, need little pruning, and usually "pay their rent" with an abundance of flowers. The hybrids of the "Gloire de Versailles" group flower on the current year's growth and need a little trimming up with the secateurs each spring; they are more or less hardy in the open shrubbery. The other group which flower on the previous year's wood are best for walls and of these I would pick *Ceanothus dentatus*, *C. rigidus*, *C. thyrsiflorus*, *C. Veitchianus*, and for the warm districts add *C. papillosus* to this list.

Abutilon vitifolium, if planted in a sunny recess of the wall, will speedily grow up to twelve feet in height. It needs no pruning but will require a few ties to hold it back to the corner of the wall. There during June and July its three-inch violet-lilac flower will show up magnificently against the greyish, downy, maple-like leaves. There is a pure white variety.

Another shrub which flowers on the current year's wood is *Abutilon magapoticum*, and the better the plant grows the more flowers will be forthcoming. It begins to bloom during June and as the growths lengthen the flowers continue to open until autumn frosts call a halt. This has quite a different habit from *A. vitifolium* and will need regular attention for tying. It is suitable for a six-foot wall, and its flowers are very conspicuous with rich red calyces and yellow flowers with protruding purplish-brown stamens—a very happy combination of colours.

Acacia dealbata is undoubtedly a gamble to plant anywhere where severe frosts may occur, but planted against a very warm wall it is worth the risk. *Actinidia kolomikta* is a deciduous climber worthy of a place for its unique foliage, having leaves sometimes half-pink and half-white, while others contain these colours in varying proportions. *Azara lanceolata* from Chile makes a good wall shrub of medium size, carrying sprays of flowers in yellow clusters, followed in the autumn with round greyish-white berries.

From Tasmania comes *Billardiera longiflora*; it is a slender climber with fine, small leaves, uninteresting flowers, beautiful large dark-blue fruits over half an inch long. *Carpenteria californica* has been known to grow up to six or seven feet high. It has large evergreen leaves and during June large clusters of flowers of great beauty, nearly three inches across. The

Opposite: Wistaria sinensis. A Chinese species with slightly fragrant violet-blue racemes of flowers, the ideal climber where space is not restricted







Opposite: A Clematis of the *Lanuginosa* type, which will flower on both old and young wood

Above left: *Clematis Armandii*

An evergreen climber of great merit. This flowers on the previous year's growth

Above right: *Clematis Nellie Moser*—one of the most reliable varieties

Left: *Clematis viticella* var. *Grey Lady*

This should be pruned back to within six inches of the base annually

Sophora tetraptera var. *microphylla*

A charming shrub from New Zealand with beautiful golden tubular flowers





Passiflora coerulea

The blue Passion Flower which sometimes produces large yellow egg-shaped fruits



(By kind permission of the Marquess of Northampton.)

The facade of Compton Wynyates, Tyke, Warwickshire, beautifully dressed with shrubs and climbers. Here no rampant subjects are allowed to spoil or obscure the fine architecture. Among the many plants which clothe the wall are the Austrian Copper and Yellow Roses, Banksian Roses, *Amelopsis*, *Jasmine*, *Kerria japonica*, *Carrya elliptica*, the purple *Clematis Jackmanii*, *C. montana*, *Pyracanthas*, *Forsythias*, and variously-coloured vines.



Wistaria multijuga

A fine form of W. floribunda with longer racemes of flowers than any other Wistaria



Spiraea discolor

A good shrub with handsome drooping panicles of creamy-white flowers



Above: *Clanthus panicus*
A New Zealand shrub with
flowers shaped like a lobster's
claw. This needs the warmest
wall available

Left: *Vitex Agnus-castus*, the
Chaste Tree

An aromatic Mediterranean shrub
which needs a warm sunny wall
Below: *Chimonanthus fragrans*
well known as the Chinese
Winter Sweet

Opposite: *Billardiera longiflora*.
A charming Tasmanian ever-
green, trailing plant, with large
deep-blue berries; rather tender





Lilac Jan van Tol
A popular and easily grown variety.



Lonicera japonica var. *Halleana*
A semi-evergreen Honeysuckle with
very highly fragrant white to yellow
flowers



Actinidia chinensis
A vigorous climber with large leaves,
buff-yellow flowers and sometimes
edible fruits

variety known as Elstead or Ladhams Variety is the best. Any shrub which flowers during the winter months is a joy in the garden, but when the flowers are accompanied with a glorious scent as in *Chimonanthus fragrans*, it is doubly welcomed.

It is perhaps stretching the point to recommend the fascinating *Clianthus puniceus*, for a wall outside, but it is worth the risk in favoured parts. When it escapes very severe weather this unique plant, with its two and a half-inch flowers shaped like a lobster's claw of brilliant red, is worthy of the best warm position available. *Cotoneaster horizontalis* will ascend a wall with no artificial support, and reach heights up to eight feet. During the autumn there are few shrubs that can beat it for colour of foliage and berries. From the Atlas Mountains, *Cytisus Battandieri* is a strong grower not really needing wall protection, but the trifoliate, greyish leaves and yellow flowers form a happy combination. It makes a good quick wall cover, but the plant will need attention by tying the strong growths in occasionally.

Daphne odora is just the plant for the very low wall. The purplish flowers are very fragrant and if planted beneath the window every benefit of the delicious perfume will be received. Another sweet-scented plant, *Lippia citriodora*, the "Lemon-scented Verbena", should also receive a like position by the window or near the entrance doors. Escallonias do well in our shrubberies but the lovely foliaged *E. Iveyi* and *E. montevidensis* are two white-flowered species of outstanding quality.

Fabiana imbricata and *F. violacea* belong to the Solanum family, yet annually they produce a profusion of white or violet Heath-like flowers respectively. This shrub should succeed on any south or west wall in the mild climates and attain heights up to eight feet. *Fremontia californica* needs all the sun available, and is best if allowed to run straight up. It is suitable for a high wall, and when covered with its golden yellow two-inch flowers, it certainly is a grand sight.

The lovely Jasminums, some with their exquisite perfume, are especially suitable to grace the walls of our homes. The white flowers of *J. officinale* from summer to early autumn have the best scent, *J. primulinum* (not very hardy) has the largest flowers, while *J. nudiflorum* must take first place of them all. At home, on almost any wall, this last-named shrub will flower continually throughout the winter, and rival *Hamamelis mollis* with its yellow flowers.

Another family of climbers which deserves particular mention for the

will grow almost anywhere except in chalk or limestone districts and combine compact habit with good foliage and beautiful flowers. They may be planted in beds and borders on or around the open lawn. For the convenience of the reader I have divided them into groups of approximate colouring, but even then their tints vary considerably.

White: "The Bride" is very floriferous, its white flowers have greenish markings; Mrs. John Millais, white with a yellow eye; Helen Schiffner, a fine white; Mrs. T. Agnew, white with a lemon blotch; Mrs. Anthony Waterer, white.

Purple tints: Purple Splendour, the finest of its colour, of good habit, rich dark purple with a darker blotch; Royal Purple, perhaps slightly hardier, purple with yellow blotch; *R. fastuosum* var. *flore pleno*, a distinct variety of good habit and semi-double flowers of a rich mauve which lasts well; Sir Joseph Whitworth, deep lake; Mrs. H. Koster, light mauve.

Blush: Mrs. J. C. Williams, blush spotted; Gomer Waterer, forms good truss, slightly tinted with mauve; Lady G. Egerton, very pale lilac; Sweet Simplicity, white edged with clear pink.

Pink: Lady Clementine Mitford, a most lovely shade of peach-pink with deeper margins; Pink Pearl, one of the largest and finest pinks, inclined to fade slightly in full sun; Strategist, an old, but excellent variety, fine clear pink; Midsummer, fine rose-pink, flowers late.

Crimson: Cynthia, a rich rosy-crimson of good habit and fine truss; John Waterer, crimson; Lord Roberts, dark red with black spots; William Austin, dark crimson; C. T. Sargent, very hardy.

Scarlet Crimson: Ascot Brilliant, a free-flowering compact plant, prefers slight shade; Doncaster, one of the best, with rich green foliage and brilliant scarlet-crimson flowers with a dark blotch.

The above list by no means exhausts the varieties which will succeed under more or less unfavourable conditions. We will now consider those which are fairly hardy, but appreciate slight shade. White: Loder's White, possessing every good quality, handsome foliage, fine truss and beautifully crisped flowers slightly tinted at first, developing into pure white; Mrs. P. D. Williams, ivory-white with brown spots; Duchess of Portland, white; Mrs. Lindsay Smith, a very large-flowered white with a tinge of green; *R. Loderi*, that superb hybrid between *R. Fortunei* and *R. Griffithianum*, must have a place in this list, for it grows well in Sussex and many other less favourable places where it can obtain shelter from wind. The foliage is large, with flowers to match, sometimes six

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inches across, of various tints from white to rosy-pink. One of the finest varieties is King George, blush pink, fading to white.

Pink: Corry Koster, light pink spotted crimson, lobes fimbriated; Professor Hugo de Vries, rather deeper colour than Pink Pearl; Prince of Wales, rose-pink, lighter centre; Mrs. P. Martineau, rose-pink, pale yellow blotch.

Yellow and yellow shaded with pink: Sir John Ramsden, yellow suffused with pink; Souvenir de W. C. Slocock, pale primrose yellow; Unique (Slocock), pale yellow; N. N. Sherwood, pink with gold centre; Letty Edwards, pale yellow; Dairy Maid, lemon flushed with pink.

Purple: Countess of Athlone, a beautiful soft mauve.

Crimson: Princess Elizabeth—will be in request when better known; Pygmalion, crimson-scarlet spotted with black; Goldsworth Crimson, an excellent variety; Britannia, has good habit, foliage and truss, bright crimson-red.

Red: Mars, fine truss, a deep, true red; Mrs. A. M. Williams, bright crimson-red, very fine; Rubens, rich, deep red; Miss Betty Steward, vermilion-red; Langley Park, deep red; Essex Scarlet, very desirable, scarlet-red.

Some species which can usually be obtained from Rhododendron nurseries and can be grown under the same conditions as the hybrids listed in the second list are: *R. Augustinii*, fine lavender-blue; *R. campylocarpum*, prefers shade, the best yellow although rather tender; *R. cinnabarinum*, bright cinnabar-red, and its variety *Roylei* of a more intense shade; *R. decorum*, large flowers of good shape, white, sweetly scented; *R. Fortunei* has large lilac flowers and forms a large bush or small tree; *R. Griersonianum*, a rather straggling shrub, bearing freely, bright geranium-red flowers; it is worth trying in all but the coldest gardens and has been most successfully used as a parent; *R. haematodes*, the brilliant scarlet-crimson flowers are worth waiting for; *R. polyanthum*, flowers white, rosy-pink, and buff-yellow; *R. Thomsonii*, hardy in sheltered places, flowers freely as it ages.

Some of my readers may live in favoured parts where they will be able to grow many tender species and varieties, especially the large-leaved kinds, with noble trusses of cream and pale yellow flowers. Among these *R. sino-grande* has perhaps the largest leaves of any and creamy-white flowers with a crimson blotch. *R. Macabeum* is one of the hardiest and has fine large leaves with a silver lining—it has already reached ten feet

or more in Sussex and borne trusses of lovely yellow flowers blotched with crimson. *R. Falconeri* is well known, the leaves large, russet beneath, and bears cream flowers freely as it ages; *R. arizelum*, some plants of a beautiful yellow shade occur among the seedlings of this species.

A few other tender species which must be included on account of their brilliant flowers are *R. Elliotii* (K.W. 7725) soft green leaves and scarlet flowers and *R. facetum* very similar to *R. eriogynum*, one of the parents of "Tally Ho". There are others but it is not everyone who has the opportunity to grow them.

Some at least of the hardy alpine Rhododendrons should find a home in the smallest garden where suitable conditions exist. They are mostly children of the upland moors where they cover the ground as Heaths do in Britain. The species named are quite hardy, love the open, and should be planted like Heaths. Many growers have made undulating gardens, sometimes with a few large rocks or boulders to give it a wilder appearance. Banks and rocks are by no means necessary, but the southern slopes afford places for the sun-lovers—often those which are most aromatic—and the northern side can be used for those which prefer shade.

Provided the soil is favourable much preparation is not needed. If any alteration of the ground-level is attempted, the surface soil must be retained at the top. It should be worked up in dry weather to a friable condition. A coating of woodland peat or leaf-mould and sand should be spread over the surface. Do not plant deeply—a covering of one or two inches of soil over the ball of roots is sufficient; tread in firmly. A top-dressing of leaf-mould or chopped bracken is beneficial. There are numerous suitable species and a few hybrids and a list of the best is given below.

R. aperantum, twelve inches high, colours various, said to be difficult, but I have not found it so. *R. calostrotum*, twelve inches high, flat, rosy-purple flowers; *R. cretaceiflorum*, small, white and pale pink compact growth, and very lovely; *R. hippophaeoides*, eighteen inches high, mauve-blue tree-flowering plant. *R. myrtilloides*, three to four inches high; *R. pemakoense*, ten inches high, travels beneath the surface like a *Pernettya* and has large pink-mauve flowers; *R. cantabile*, two and a half feet high, deep violet-blue; *R. pumilum*, a miniature gem, pink; *R. racemosum*, the dwarf forms are very fine, especially Forrest's No. 19404; *R. radicans*, two to four inches high, purple, flowers late. *R. repens*, a lovely, prostrate, creeping plant, it revels in a moist northern bank or shade of a rock and



A rose-pink Rhododendron in half-standard form, beautiful but not natural



Rhododendron Loder's White. The queen of Rhododendrons. The superb trusses are pale pink, changing to pure white; and (below): Rhododendron Professor Hugo de Vries. Large flowers of deep pink, not unlike Pink Pearl



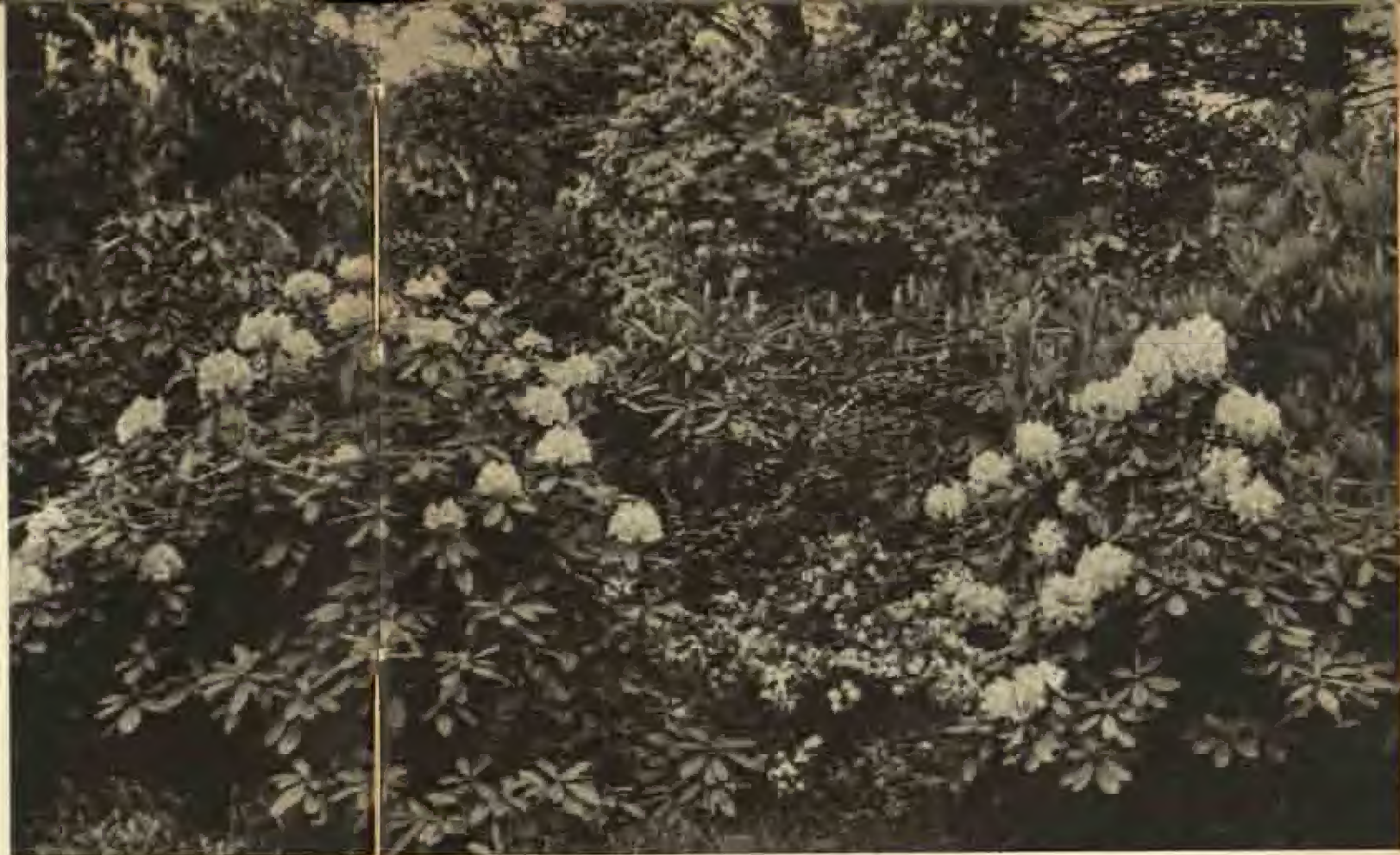


Rhododendron inamorata

A recent introduction with cream and primrose flowers

Right: *Rhododendron* species at South Lodge

Below: *Rhododendron Hanceanum* var. *nanum*
A dwarf form, very floriferous, about 3-4 feet in height;
prefers slight shade



Above: A *Rhododendron Fortunei* Seedling
Seedlings vary in size, shape, and substance; hardy and fragrant

Left: A bed of deciduous *Azaleas*
Plants of dual purpose with handsome flowers in May or June, and splendid coloured foliage in autumn

*Below: Rhododendron Letty Edwards
One of the best of the yellow hybrids*

*Right: Rhododendron Loderi var. King
George*

*The finest form of a very fine group of
hybrids. Flowers bluish, fading pure white;
up to 6 inches across in large trusses*



Below: Rhododendron Falconeri

*A tree 40 to 50 feet high, with large green
leaves like suede leather on the underside,
and noble trusses of cream or pale yellow
flowers; somewhat tender*





Rhododendron Lady Clementine Mitford
An old hardy variety; flowers delicate peach colour



Lake with a screen of Rhododendrons at South Lodge. Note the advantage of a good setting. The still water conveys a feeling of peace

Rhododendrons at Sheffield Park, where many species and varieties flourish. Well worth a visit in May or June



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has brilliant, large scarlet flowers. *R. Williamsianum* likes similar conditions, and has comparatively large leaves, bronze when young with bell-like flowers of clear shell-pink. Two notable hybrids are Blue Tit and Blue Diamond, two feet high, of branching habit, freely covered with bright lavender-blue flowers.

Some forms of *R. repens* mentioned above are unfortunately shy in flowering; this has been remedied by crossing and recrossing them with the best forms of *R. Griersonianum* and other species and varieties until some very fine, free-flowering hybrids with exceptionally brilliant flowers have been obtained. The rich blood-red colours have been much admired and the highest honours awarded them when shown at the Royal Horticultural Society's shows. Given suitable positions and soil, the dwarf Rhododendrons are easy to grow, but room must be allowed for them to spread out, for once they become drawn up and leggy, their stems are exposed to wind and sun and they suffer in consequence. Some of them, such as *R. pemakoense*, are easily rooted from cuttings, but others, more downy in the leaf, are sometimes difficult. All set seeds freely. These ripen in late autumn and should be preserved in the pods and sown in the following January. Some will flower in less than three years from the time the seeds are sown; a temperature of 45°-50° F. is high enough for germination, and the young plants can, when transplanted, be grown in a cold frame and later in the open air. These remarks apply equally to the taller species and varieties, except that they may require more headroom and shade, and in some cases a longer period before flowering.

The comparatively large size of most Rhododendron flowers, the distinctness of the parts and the ease with which they can be emasculated, offers an easy road to the amateur desirous of attempting the fascinating work of raising new kinds. Much may be learnt by noting the parentage of those varieties which are fortunate enough to obtain awards when shown before the Rhododendron Committee of the Royal Horticultural Society.

The short descriptions are all that space allows and the reader is recommended to visit Rhododendron shows, nurseries, and private gardens where they are grown, in order to make a personal selection.

all aspects of a garden, whether in the full sun or shade, with north, south, east, or west aspect.

There is no excuse today for the dull and uninteresting shrubbery border of Victorian days with Privet, Laurel, the spotted Aucuba, Box, Yew, and perhaps an occasional Laurustinus or Common Mock Orange. Also with most of these uninteresting and untidy shrub beds and borders little or no attention was given to the preparation of the soil; when a Laurel or Privet died, or became too unwieldy, it was dug out and another put in.

The preparation of the ground or soil for a shrub bed or border is just as important as for herbaceous plants. I consider it is even more necessary to trench well and to prepare the ground for shrubs and trees because most of this is permanent planting, whereas many herbaceous plants are, or should be, lifted and replanted every second or third year.

While the planting of evergreen shrubs is best undertaken in autumn or spring, deciduous, or leaf-losing, shrubs and trees can be safely planted, or transplanted, from early November to about mid-March, when soil conditions and temperature permit. Planting should not be attempted during frosty periods, or when the ground is very wet.

THE HORSE-CHESTNUTS

The Common Horse-chestnut, *Aesculus Hippocastanum*, and its double-flowered variety, *plenum* or *pleno*, are so well known that only a reference in passing is necessary. It is perhaps the most beautiful of all our big hardy flowering trees.

For large gardens consideration should be given to the planting of the Pink Horse-chestnut, *Aesculus carnea*, and the crimson-flowered variety, *Briotii*. They grow to only about half the size of the Common Horse-chestnut—thirty to fifty feet—and are most attractive and distinct flowering trees.

One would like to see more use made of the Shrubby Chestnut or Buckeye, *A. parviflora*, a summer-flowering shrub forming a large bush eight or nine feet high with showy racemes of white flowers.

As their name suggests the Amelanchiers or Snowy Mespiluses are notable for the profusion of small white blossoms produced in spring.

The two best-known small trees are *A. laevis* and *A. canadensis*. A hybrid between the two has larger flowers and is named *A. grandiflora*. It has attractive reddish young leaves which expand with the flowers.

The *Crataegus*—Thorns, Hawthorns or May, to quote three of their popular names—are the largest genus of small trees cultivated in our gardens. They have three claims to beauty for ornamental planting—flowers, fruits, and autumn colour. Their habit of growth makes the Thorns particularly attractive as standard lawn specimens, as trees for extensive shrubs borders, and for pleasure-ground planting. The single- and double-flowered pink and crimson Thorns, although well known, are by no means so freely planted considering their value as brightly coloured flowering trees; they are excellent in town gardens.

Half a dozen attractive fruiting or berry-bearing Thorns are *C. Carrièrei*, *C. prunifolia*, *C. orientalis*, *C. pinnatifida major*, *C. tanacetifolia*, and *C. macracantha*. To plant for effective autumn colour *C. prunifolia* is one of the best, but *C. Carrièrei* is also effective at this season.

Davidia Vilmoriniana is the better of the two Chinese Dove Trees as an ornamental flowering tree for gardens. It is very distinct and conspicuous among exotic trees in May, when draped with large white bracts, two to each inflorescence. These have earned it the popular names of "Pocket Handkerchief Tree" and "Dove Tree".

Cladrastis and *Sophora* are little grown, hardy trees belonging to the Leguminosae family. The chief reason for this neglect may be because the trees are usually twenty to twenty-five years old before they produce their first flowers. One might advance the same excuse for our British Oaks.

Both trees, however, have particularly attractive foliage of distinction and beauty throughout the summer and autumn; *Sophora japonica* with its elegant, pinnate foliage is one of the latest trees to shed its attractive fern-like foliage in late autumn. Added to this, the *Sophora*, when attaining a good age, produces an abundance of panicles of white flowers in late summer and early autumn.

Three species of *Cladrastis* are in cultivation, all having attractive pinnate leaves. Two come from China, *C. sinensis* and *C. Wilsoni*, and *C. tinctoria*, the Yellow Wood, from North America; all merit attention for pleasure-ground planting.

All three have small pea-like white flowers, freely borne in panicles, the two Chinese species in broad pyramidal panicles, the North American Yellow Wood in terminal, drooping panicles, rather suggesting a white *Wistaria*. The flowering season is June.

Several *Acers* or Chinese Maples are worthy of attention to add interest

and variety to our pleasure grounds, as specimen trees of moderate size. The most distinct is *Acer griseum*, the trunk and branches of which may easily be mistaken for a Birch in winter. It has loose mahogany-coloured flakes of curling bark beneath which is the lighter, shining brown new bark. The leaves are richly tinted before falling in autumn. *Acer Davidii* and *A. Hersii* are notable for their striated bark and the rich autumn colour of their leaves.

Prunus Pollardii, of Australian origin, is said to be a cross between an Almond and a Peach. It flowers a little later than the common Almond and has rather larger and richer coloured blossoms. It makes a more shapely tree than the average Almond.

As flowering trees of moderate size the Japanese Cherries have been very freely planted in recent years. A selection of the best should include Sekiyama, double deep rose-pink, and upright in growth. Fugenzo, deep pink, with a spreading habit; yedoensis, blush-white, early flowering; Temari, semi-double, apple-blossom pink; Sirotac (Mt. Fuji), pure white; and Ukon, sulphur-yellow. The double white form of the Common Gean, *Prunus Avium* var. *plena*, is a beautiful tree with masses of snow-white flowers in spring.

The Laburnum, a very well-known small flowering tree, is not as freely and widely planted as its beauty and adaptability for small gardens and most soils and positions merit.

As flowering trees the best are the three hybrids between the Common Laburnum, *L. vulgare* and the Scotch Laburnum, *L. alpinum*; these are *L. Vossii*, *L. Watereri*, and *L. Latest and Longest*, a late-flowering variety with long racemes of golden yellow flowers.

The Malus family, now separated from the genus Pyrus, contains many attractive flowering and fruiting trees of moderate size. *M. Arnoldiana*, reddish in bud, opening to rosy-pink, and *M. Lady Northcliffe* are two of the best of the "Floribunda" type. In the purple-flowered group it is not easy to choose between *M. purpurea*, *M. Eleyi*, and *M. Lemoinei*. All three should find a place when space permits. *M. Lemoinei* has the darkest flowers. One would also like to include three of the Crab Apples, Dartmouth Crab, John Downie, and Red Siberian; all are beautiful in flower and fruit, and a most useful jelly or preserve can be made from the little apples.

The Sorbus genus is another section of Pyrus which is receiving considerable attention in these days from planters interested in berry-bearing

and foliage trees. It includes the Mountain Ash, Whitebeam, and Service trees.

A selection of the most distinct and desirable may include *S. Folgeri*, a narrow-leaved tree of graceful habit with clusters of bright red berries in late summer and autumn; *S. discolor*, brilliant autumn foliage and orange-red fruits; *S. scalaris*, pinnate, glossy green leaves, white on the undersides, dark red berries; *S. Vilmoriniana*, a small tree, with pinnate fern-like leaves, and clusters of pink-tinted fruits; *S. pinnatifida* var. *Gibbsii*, a hybrid raised at Aldenham, large clusters of brilliant red berries; and *S. hupehensis*, pinnate leaves and clusters of white, pink-tinted berries.

The pink-flowered Robinias or False Acacias give a distinct character to a collection of flowering trees and shrubs; several are of small or only moderate size.

R. Kelseyi, a small tree, or large shrub, has graceful foliage and mauve-pink blossoms; *R. hispida* var. *macrophylla*, a spreading, low tree or wide bush with drooping racemes of large pink pea-like blossoms; *R. Boyntonii*, a shrub eight to ten feet high with racemes of pink to rosy-purple and white flowers in late May and June. *R. Decaisneana* is my choice as the best deep rose-coloured form, or variety, of the Common False Acacia; it is most attractive as a specimen lawn tree.

Most cultivators of hardy shrubs and trees look upon Magnolias as the most beautiful of the many families we grow in our gardens. I have heard them aptly described as the aristocrats among flowering shrubs.

Magnolias to be really successful require a little more attention than the majority of trees and shrubs. Choose sunny and sheltered positions. Prepare holes, where the ground is well drained, and fill them with good composts of fibrous loam, peat, leaf-mould, and plenty of coarse grit. There are two seasons for planting, late autumn and spring; I have had most successful results from planting in early April, but much depends on the weather at the time, and the condition of the ground. When growth is about to recommence for the season is a good time, even if the plants are in flower, as probably *M. stellata* and *M. conspicua* would be. It is the leaf-growth, not the flowers, which is related to root growth.

Varying from three or four feet to tallish trees, there are Magnolias for all good gardens, large and small. For the small garden choose *M. stellata*, *M. parviflora* and possibly the white upright-growing *M. salicifolia* and the wine-coloured *M. Soulangiana* var. *nigra*.

The best hardy Magnolias for general planting are *M. Soulangiana* and its varieties *alba*, *superba*, and *Alexandrina*, *M. Lemoinei*, *M. rustica* var. *rubra* and *M. speciosa*.

The Camellias are receiving much more attention at the present time as border shrubs. The plants are as hardy or hardier than the Cherry Laurel, but most of the varieties flower early in the season, and for this reason should be planted in positions sheltered from the east and the morning sun. Usually the most satisfactory positions are in shrub borders facing west, in semi-shaded sheltered woodlands, or against a north to north-west wall. The hybrids or varieties of *C. japonica* most suitable for outdoor culture include *Chandleri elegans*, *Donckelaarii*, *Gloire de Nantes*, *imbricata rubra plena*, *latifolia*, and *Mathiotiana*.

A choice collection of Camellias should also include *C. saluenensis* and the new hybrids, the small-flowered white *C. cuspidata*, and the winter-flowering *C. Sasanqua* varieties.

A native of Japan, Korea, and Central China, *Cornus Kousa* forms an attractive deciduous large shrub or small tree of bushy habit. Its particular claims to beauty are four large creamy-white bracts surrounding the small flowers produced in a button-like mass.

C. Kousa var. *chinensis* is possibly the best hardy Cornel for the average British garden. It was introduced from China by Wilson to America's Arnold Arboretum in 1907 and from there to British gardens.

In China it occurs as a large shrub, or small tree, up to about thirty feet in height. Growth is somewhat similar with us, and it forms an attractive wide and tall bush; if restricted to a single stem when young, however, it forms a very showy small tree.

The so-called flowers are of considerable interest to students of botany. Four large showy white bracts surround the small true flowers, which are closely set on a central, globular disc. The bracts vary in size on the specimens I have seen in different gardens, which suggest different seedling origin, though the actual plants may have been propagated by cuttings, or layers. One notably good seedling form at Kew has petal-like white bracts two and a half inches long and one and a quarter inches wide.

The bushes, or trees, have a particularly lengthy season of beauty. In spring the green petal-like bracts gradually increase in size, changing by degrees to greenish-white, creamy-white, to pure white in June. At their best for about a month, the bracts age to creamy-white and a brownish-green tinge.

The prepared bed of soil should be fairly rich and well-drained for Cornels. If the natural soil is peaty add some good loam and leaf-mould; if loamy, add plenty of sandy peat and leaf-mould.

In some gardens the leaves change to shades of red or scarlet before falling. This, I think, depends largely on the nature of the soil.

For a second Cornel of particular interest and beauty I suggest planting *Cornus Nuttallii* from Western North America. Where this Cornel does well, generally in the south and west of Britain, it is a tree of outstanding attraction and character. It is not easy to transplant successfully when of any appreciable size, but I have grown plants in pots until large enough for their permanent positions, and have also planted youngsters a foot high in beds surrounded by moderate-growing shrubs to act as nurses, affording protection to the small trees for a few years until very well established and growing freely.

Developing from green to creamy-white, when fully open, the white bracts are tinted with pink and last in beauty for more than a month.

The introduction of new species of both deciduous and evergreen *Berberis* from China and South America, and the raising of very many hybrids in gardens, have added considerably to the value of the family as ornamental flowering and fruiting bushes in our gardens.

As companion evergreen flowering bushes to *B. Darwinii* and *B. stenophylla*, several introductions of Comber are noteworthy. I like best the natural hybrid *B. lologensis* (*B. Darwinii* \times *B. linearifolia*) which, as one would expect when raised from seeds, varies in the richness and shading of the flowers. One of the best is named Comber's Apricot, which, to obtain true, is propagated by layering, cuttings, and grafting. The globular orange-red blossoms of the best forms of *B. linearifolia* are very effective against the dark-green leaves. No collection of the best Barberries can be considered complete if it does not include three other Andean deciduous kinds—*B. montana*, *B. chillanensis*, and the variety *hirtipes*, all very attractive flowering bushes.

When first introduced from China quite a number of the deciduous Barberries proved to be attractive berry-bearing shrubs, notably *B. polyantha*, *B. Wilsonae*, *B. aggregata*, the variety *Prattii*, and *B. subcaudilata*. Grown together at Wisley and elsewhere, these, and probably several other species, have cross-pollinated, resulting in a very attractive and useful series of named varieties and mixed seedlings surpassing the species in the rich colouring and freedom with which the fruits are produced.

Quite a number of the hybrids have been given the Award of Merit by the Royal Horticultural Society, including *B. rubrostilla* and others raised at Wisley. Barbarossa is a particularly effective shrub when crowded with clusters of coral-red fruits. It was raised in the Kilkenny Nurseries of William Watson.

The introduction of a number of Chinese evergreen Barberries has provided the opportunity to add variety and some distinction to hedging shrubs. With its upright habit of growth and distinct undulate leaves *B. Gagnepainii* makes a pleasing low hedge requiring very little upkeep. *B. verruculosa* is another semi-dwarf slow-growing species having dark glossy green leaves. Good evergreen hedging species of taller growth are *B. Julianae* and *B. Sargentiana*, together with the Java species *B. xanthoxylon*.

Introductions of Cotoneasters from China during the closing years of the last century and the early years of this, more than doubled the number of species worthy of cultivation in our gardens.

One may confidently class the Cotoneasters as general utility shrubs. They thrive in most soils, in sun or partial shade. Several of the evergreens are very attractive berry-bearing shrubs for a north wall. There are species for the shrub border, varying in height from a few inches to the tall, spreading *C. frigida*, twenty feet or more in height. A number, like *C. congesta*, *C. conspicua*, *C. microphylla*, the variety *thymifolia*, *C. adpressa*, and *C. horizontalis*, are ideal dwarf shrubs for the rock garden. Cotoneasters thrive in town gardens and several are good subjects for planting beneath deciduous trees.

With so many from which to choose it is only possible to mention a few of the most distinct and desirable in addition to those already named.

C. conspicua is a low-growing evergreen shrub with spreading branches wreathed with white, pink-tinted flowers in early summer followed by masses of red berries. *C. salicifolia* is a graceful evergreen shrub with arching branches, clusters of small white flowers, and showy red fruits. *C. glaucophylla* flowers in July and forms a large bush; the many sprays of red berries are very showy among the evergreen foliage during the winter. *C. Wardii* is another evergreen species with a silvery sheen beneath the leaves and many-fruited clusters of orange-red berries. *C. Watereri* is a deciduous or semi-evergreen hybrid of *C. frigida*, vigorous in growth, forming a tall spreading shrub producing very freely its large clusters of bright red berries.



Double-flowered Horse-chestnut

Aesculus Hippocastanum var. *flore pleno*. Very suitable to plant in public parks as it does not produce "conkers"



Berberis Wilsonae

One of the best of the dwarfed Chinese Barberries with golden-yellow flowers and salmon-red berries



Above: *Philadelphus Normae*

One of the best large-flowered single Mock Oranges

Opposite page: *Spiraea arguta*
A hybrid. Many authorities consider this
the most beautiful of the spring-flowering
Spiraea



Right: *Desfontainia spinosa*

An attractive evergreen shrub for mild
climates; native of Chile and Peru





Hamamelis mollis
The Chinese Witch-hazel
The best of the Witch-hazels in
flower and foliage



Prunus Avium var. *flore plena*
The double-flowered variety of our British Wild Gomm.
One of the most beautiful of all flowering trees



Magnolia Soulangiana

A hybrid raised in France. The best of the taller
Magnolias for British gardens

Right: *Davidia Vilmorentiana*
Chinese Dove-tree

The most distinct and interesting of the many new
trees introduced to cultivation from China during
the last half-century



Below: *Camellia japonica* var. *magnoliaeflora*
Semi-double pale flesh-coloured flowers





Opposite: *Halimium ocymoides*
(*Cistus algarvensis*)

Left: Double White Lilac
Madame Lemoine
A fine popular variety

Below right: *Cornus Kousa* in fruit.
A large deciduous shrub or small
tree with attractive creamy-white
bracts and fleshy fruits

Below: *Viburnum tomentosum*
var. *plicatum* (Japanese Snowball)
One of the best dozen hardy deci-
duous flowering shrubs for general
planting in gardens





Hydrangea hortensis, a popular flowering shrub for mild districts, and *Ilex ilicifolia*, a graceful, tall August-flowering shrub for mild districts and sheltered sunny walls

Cytisus purpureus and *Genista hispanica* at Bulkeley Mill, North Wales. Two dwarf sun-loving hardy shrubs



Of the older well-known deciduous *Cotoneasters*, *C. horizontalis* is one of the most ornamental. Its horizontal or spreading growth with fish-bone-like branching is always attractive, but particularly in autumn when clothed with red berries and the autumnal fire-like colouring of the leaves.

The introduction of *Pyracantha Rogersiana* by Forrest in 1911 gave us a notable addition to hardy evergreen berry-bearing shrubs. I give it first place among the *Pyracanthas* or Fire Thorns as a hardy free-flowering and fruiting bush for shrub beds and borders. It also makes a very good lawn specimen with masses of May-like flower clusters. The berries vary in colour from rich yellow to red. Nursery shrub catalogues list the type with red fruits, the variety *aurantiaca* with orange fruits, and *flava* rich yellow. The average height appears to be five to six feet.

In Victorian and early Edwardian days the evergreen *Escallonias* were mostly cultivated in the warm and sheltered gardens of the south and west. Elsewhere one usually associated them with south and west walls where, with some annual pruning, thinning, and training, they were attractive summer-flowering evergreens.

By crossing several and in particular the hardy deciduous *E. Philippiana* with the evergreen species, hybridists have succeeded in raising a race of beautiful summer-flowering shrubs combining the hardiness of *E. Philippiana* with the foliage and coloured blossoms of the evergreen species. As a family the hybrid evergreen *Escallonias* are today among our best and most useful summer-flowering shrubs.

The best known of the early hybrids is *E. langleyensis*, raised about 1893 in James Veitch's nursery at Langley. Three notable hybrids raised in Ireland, two at Glasnevin and one at Rowallane, are C. F. Ball, Glasnevin Hybrid, and William Watson. It is, however, the more recent hybrids raised at the Donard Nursery which offer the possibility of adding so much variety and beauty to shrub beds and borders in summer. As it is difficult to single out any one or two varieties of special merit I will name a selection of the best in alphabetical order and leave readers to choose their favourite colours: Donard Beauty, rose-red; Donard Brilliance, crimson; Donard Gem, pink; Donard Seedling, pale pink; Donard White; Glory of Donard, rich carmine; Slieve Donard, rich pink.

Perhaps the most important point about these new hybrid *Escallonias* is that the shrubs are at their best from June to August when the great time of flowering shrubs is waning and past.

No shrub garden of any size is complete if it does not include a representative selection of Lilacs. I personally favour the single-flowered varieties as the more attractive and desirable, but the fact that a goodly number of double-flowered varieties is listed in nursery shrub catalogues points to a demand for both among shrub lovers.

A few of the newer varieties introduced previous to the outbreak of the last war are worthy of attention by would-be planters.

Among singles *Candeur* is a beautiful creamy-white with large and long tubular flowers. *Jan van Tol* is a pure white with extra large panicles; *Marechal Foch* has large bright carmine-rose pips; and *Massena* extra large deep purple-red flowers. Distinct additions among the doubles are *Ami Schott*, deep cobalt blue; *Katherine Havemeyer*, deep lavender; *Mrs. Edward Harding*, with extra large panicles, reddish flowers; *Rosace*, soft mauve-pink; and *Edith Cavell* cream to milk-white.

To obtain the best results with these new varieties and, in fact, with all the Lilacs, some attention must be given the bushes after flowering. Remove all the old faded flowers and thin the new young shoots where crowded. All thin and weak twiggy wood should be cut out, letting light and air into the bushes to ripen the wood.

The Common Mock Orange, *Philadelphus coronarius*, is one of our oldest cultivated exotic shrubs and a frequent occupant of old shrub borders. Today the hybrids raised in gardens receive more attention from cultivators than the species although several of the newer Chinese species are deserving of increased attention.

The Mock Oranges are easily cultivated deciduous shrubs, thriving in most soils and positions although they do not flower well in shade. Most of them have deliciously fragrant flowers which are freely produced during June and early July.

A particularly valuable character of the *Philadelphus* family is the varying height of the numerous species and hybrids. These range from *P. microphyllus* and *P. purpureus-maculatus*, only three to four feet high, to *P. grandiflorus* and *P. latifolius*, often twenty feet high.

A selection of the best varieties should include the following: single-flowered—*Atlas*, one of the largest-flowered; *Belle Etoile*, mild white, purple centre; *burfordiensis*, cup-shaped white flowers with attractive golden stamens; *Favourite*, very large white flowers; *Norma*, masses of creamy-white flowers on long arching branches; *Lemoinei erectus*, medium-sized very fragrant flowers; *Bouquet Blanc*, blossoms borne in

attractive racemes; Enchantment, upright in growth, flowers in panicles; Manteau de Hermione, one of the best dwarf double varieties, three feet high; Rosace, large fragrant semi-double blossoms; Virginal, the best of the taller-growing large-flowered double varieties.

Osmanthus Delavayi is one of the most distinct and desirable of Chinese shrubs introduced by the French missionaries; with small dark-green evergreen leaves it forms a compact bush gradually increasing in size up to some six or seven feet. The small fragrant white flowers are freely produced in April. It also makes a useful wall shrub for a south-west or west aspect for preference, where the flowers may have some shelter from spring frosts. In such a position it may grow ten feet or more tall.

The evergreen *Ceanothuses* are most floriferous shrubs and give masses of blue flowers, a colour not common among hardy shrubs. The species are natives of California and, except in sheltered gardens, are generally seen growing and flowering most successfully on sheltered walls. They are spring-flowering. Four of the best are *C. thyrsiflorus*, *C. Veitchianus*, *C. rigidus*, and *C. floribundus*.

By crossing the spring-flowering evergreens with the hardy deciduous summer- and autumn-flowering varieties, hybridists have obtained several hardy evergreens, flowering in summer and autumn. The most desirable are *C. Burkwoodii* and Autumnal Blue.

The deciduous summer- and autumn-flowering *Ceanothuses* for sunny shrub borders are best represented by the popular Gloire de Versailles, deep powder blue; Topaze, bright blue; and Marie Simon, mauve-pink.

The *Cytisus* or Broom family is a sun-loving group of hardy shrubs with a profusion of small pea-like blossoms which have been much improved by hybridists during the past twenty to thirty years. The strong-growing kinds should have the young main branches pruned rather hard back each year after flowering, otherwise the plants soon become straggly. Half a dozen of the most distinct are *Burkwoodii*, ruby red; Cornish Cream, cream and sulphur; Dorothy Walpole, velvety-crimson; Firefly, yellow and bronzy crimson; Lord Lambourne, cream and crimson; and Geoffrey Skipwith, pink and red. For the front of the shrub border *C. purpureus* should be included.

The *Cistuses* or Rock Roses are useful and attractive evergreen shrubs for warm sunny borders and banks with light, well-drained soils. As a rule they are not long-lived shrubs but are readily propagated by cuttings

and seeds. The former are preferable, unless the seeds are from an isolated bush as *Cistuses* cross-pollinate freely, and hybrids are common.

Among the most distinct and useful are *C. purpureus*, rich reddish-purple, a large flower with chocolate blotches; *C. laurifolius*, one of the hardiest tall species, six or seven feet high, with pure white flowers in June and July; Silver Pink, a pretty bush with attractive pale-pink blossoms; *C. cyprinus*, the most useful of the taller Rock Roses, with large white flowers and chocolate blotches at the base of the petals; *C. corbariensis*, a low-spreading evergreen shrub for the front of a sunny border, with crimson-tinted buds, opening white; and *C. Skanbergii*, a natural hybrid of compact growth two to three feet high, with grey-green foliage and pale soft pink flowers. Allied to the *Cistuses* are the *Halimiums*, *H. ocymoides* (*algarvensis*) yellow with dark blotches and *H. formosum* var. *concolor*, golden yellow, are two of the best.

Caryopteris clandonensis is one of the best dwarf shrubs of recent introduction. A hybrid between *C. mastacanthus* and *C. tanguticus* it has grey-tinted foliage and intense blue flowers in late summer and autumn. Best in a sunny sheltered position, it is a deciduous shrub which should be pruned rather hard each year in March. The *Cydonias* or Japanese Quinces are usually associated with house and garden walls which show off the blooms to advantage, but they also make attractive specimen shrubs and even informal hedges. Particularly desirable kinds are Knap Hill Scarlet, orange-scarlet; *Cardinalis*, rosy-red; Rowallane Seedling, rose-crimson; and the dwarf spreading *Simonsii*, dark crimson.

A number of the wild Roses, with their dainty single blossoms and showy autumn fruits should be found in all collections of hardy shrubs. *Rosa Moyesii* with most attractive and distinct tawny wine-red flowers and bottle-shaped red fruits grows six to nine feet high; *R. Willmottiae* is a charming bush of elegant spreading habit with small leaflets and rose-pink flowers, a densely branched shrub five to about seven feet high, or more if tied to a rustic pole; *R. moschata*, the Musk Rose, is a tall climbing species for a house wall or trailing through and over a large Holly or Yew tree. The corymbs of white flowers are pleasingly fragrant; *R. rugosa* has purplish-rose flowers, and large red fruits; a compact bush, it makes a good hedge, thrives in poor soils, and is a good seaside shrub.

The *Spiraeas* are very varied hardy shrubs; the majority have white flowers but a few have pink or reddish-pink blossoms. They vary in

height from about eighteen inches as in the popular red-flowered *S. japonica* var. *Anthony Waterer*, to *S. Lindleyana* up to eighteen feet in height. *S. Thunbergii* is interesting because it opens its first tiny white blossoms in March. *S. arguta*, five or six feet high, flowers during April and early May; *S. Van Houttei*, six feet or so high, in June; *S. Menziesii* var. *triumphans* with bright purplish-rose blossoms in July is upright in growth, five to six feet high; and *S. bracteata* forms an attractive rounded bush five or six feet high, covered with clusters of small pure white flowers in June.

With new introductions from China during the present century, the *Viburnums* are, today, a very important and extensive genus of deciduous and evergreen shrubs.

V. fragrans, introduced by Purdom and Farrar from Kansu, is one of our best known and most valued winter-flowering shrubs. *V. Carlesii* with rounded clusters of waxy, blush-pink flowers opening to white is a deliciously fragrant hardy shrub. *V. bitchiuense* has pink-tinted, white fragrant flowers and forms a taller, more free-growing bush than *V. Carlesii*. *V. Juddii*, raised in the Arnold Arboretum, is a hybrid between these two species. Of several berry-bearing Chinese species, *V. betulifolium* is noteworthy, with red currant-like fruits freely produced.

Among the older deciduous flowering *Viburnums* of special value are *V. Opulus* var. *sterile*, *V. tomentosum* var. *plicatum*, and *V. tomentosum* var. *Mariesii*, all with white flowers. Of the evergreen *Viburnums* the hybrid *V. Burkwodii* is a first-class early-flowering shrub for sunny shrub borders or a wall. The Laurustinus, *Viburnum Tinus*, should be in every garden; it has numerous good points—it is winter-flowering, is one of the best evergreen shrubs for shade, and it makes a most attractive hedge.

In the open in the south and west, and for a sheltered wall elsewhere, *Desfontainea spinosa*, a native of Chile and Peru, is a distinct and most attractive evergreen shrub with small Holly-like leaves and yellow and crimson tubular flowers in late summer and autumn. For the front of a dry sunny border and similar positions elsewhere requiring dwarf free-flowering shrubs, the Spanish Gorse, *Genista hispanica* is very effective. It forms compact cushions one to two feet high, covered with rich yellow blossoms in May and June.

The well-known pink-flowered *Hortensia Hydrangeas*, which botanists now include as varieties of *Hydrangea opulifolia*, though on the borderland of hardiness, are becoming increasingly popular for sheltered house-wall

borders and for cultivation in tubs with winter protection. Among the many named varieties, Elmar, Goliath, La Marne, Lovely, and Parzival are good pink and rose shades for bluing. Madame E. Mouillière is the best white.

To obtain deep blue flowers with the bluing powder, Hydrangeas should be planted in lime-free soils.

When space permits in extensive pleasure grounds and parks, the large family of Oaks or *Quercus* merit much more representative planting. The collection at Kew numbers in the neighbourhood of one hundred and fifty species and botanical varieties. The majority are deciduous trees, notably the Holm Oak, *Quercus ilex*, with numerous varieties.

Among the larger-leaved species, *Quercus rubra*, the North American Red Oak, thrives perhaps the best of all the American Oaks in Great Britain. Its large, rich green leaves attract attention in summer, and in autumn they turn a red-brown shade before falling. The American Scarlet Oak, *Q. coccinea*, and, in particular, the variety *splendens*, or Knap Hill Scarlet Oak, is one of the most outstanding of the larger growing trees to plant for its rich, glowing scarlet autumn colouring. *Q. castaneifolia*, the Chestnut-leaved Oak from the Caucasus and Persia, is a most beautiful, wide-spreading specimen lawn or park-land tree. *Q. conferta*, the Hungarian Oak, has very distinct, deeply sinuous leaves and makes a fine specimen tree, notably on chalk soils. Another Oak thriving on chalk is the Turkey Oak, *Q. Cerris*, a fine, upstanding, fast-growing tree one would like to see much more freely planted. The Algerian Oak, *Q. Mirbeckii*, is really a semi-evergreen, retaining its large, lustrous green leaves until they seem to be pushed off by the developing buds of the young leaves in spring.

Some Good Dessert Apples

By J. M. S. POTTER

INNUMERABLE VARIETIES OF APPLES HAVE BEEN GROWN IN THE PAST, AND the perusal of any up-to-date catalogue reveals a bewilderingly large number from which to choose. It is impossible to state simply what are the "best" varieties, owing to the widely differing behaviour of varieties in different localities. For example, the well-known Cox's Orange Pippin, which is generally accepted as the best-flavoured Apple, only produces really high quality fruits in districts with a moderately light rainfall and long periods of sunshine. Again there is no universal standard of taste, some people preferring a sweet, sugary flavour in an Apple, such as is usually present in imported fruits, in contrast to the "aromatic" flavour characteristic of the more popular home-grown varieties. People with dentures frequently show a preference for fruits with a soft flesh rather than those which have a firm and crisp texture. These considerations, personal idiosyncracies of taste and varying response to local climatic conditions, make any specific recommendation undesirable, and the writer would prefer, therefore, to make recommendations based on his own personal preferences in the hope that, in some cases at least, these will coincide with the requirements of the reader.

The following list of dessert varieties of Apples is arranged in sequence of ripening and not in order of merit. Whatever selection is made it should aim at providing a succession of ripe fruits over as long a season as possible. It is a mistake to plant a large number of trees of any one variety, especially an early ripening one, since the period in which the fruits are in season is very short and much waste will ensue, or else the surplus fruits will have to be given away and scarcity will be experienced later in the season. Where space is a limiting factor preference should be given to the late-ripening Apples, these being ready for use at a period when other kinds of fresh fruits are in short supply.

Of the numerous varieties which ripen in August the two that appeal most on account of flavour are Irish Peach and Laxton's Advance. The former is an old Irish variety with a small, flattish fruit, slightly mottled with red. The flesh is firm, crisp, and juicy, and has a refreshing flavour. Unfortunately this variety is a tip-bearer and so is not suitable for growing

as a restricted type of tree. Laxton's Advance is a comparatively new variety. It is rather conical in shape, and is not unlike the old Gladstone which was one of its parents. The flesh, however, is a big improvement on that of Gladstone, being juicy with a slightly aromatic flavour. A variety which ripens about the end of August or beginning of September is Epicure. This is a very free-cropping variety, well suited to the small garden because it does not grow too strongly. The fruit is medium in size, round, flat, and greenish-yellow with a crimson flush and stripes. The flesh is moderately firm, juicy, and has a distinctive aromatic flavour. Epicure may be inclined to overcrop, and when the set is heavy thinning should be carried out, otherwise the full flavour will not be developed. None of the aforementioned varieties will keep, and they should be eaten more or less as gathered from the tree. An attempt to keep the fruit for any length of time will result in the flesh becoming mealy and flavourless.

The month of September provides quite a wide choice of good varieties. Laxton's Fortune is a comparatively new variety which ripens in September and keeps into October. The tree crops freely, bears medium-sized, round, conical fruits, which are golden-yellow, flushed and striped with red. The texture is moderately firm, juicy, and has a marked aromatic flavour. Another useful variety ripening in September is James Grieve. Raised as long ago as 1890 it is still popular. It is, however, more suited to the cooler regions of the country where the flavour seems to develop more fully than in the warmer districts where the fruit tends to drop prematurely and lacks quality. This Apple is above medium size and has a golden-yellow colour, flushed with crimson. The flesh is very juicy and the flavour is good when well ripened. In the later districts James Grieve will keep into October.

To maintain a supply during October the writer would choose the old Continental variety Gravenstein. The fruit is squarish-round, somewhat angular, yellowish, with an occasional light red flush. The skin is very greasy. The flesh is very firm and crisp yet melting and the quality is first class. The one fault of Gravenstein is its early-flowering habit, and to ensure a good set it would be necessary to plant another variety with a correspondingly early-flowering period to ensure pollination. Another first-class Apple for October is St. Edmund's Pippin with its small, golden russet fruits. The flesh is firm, very juicy for a russet and of good quality. The habit of growth produces a shapely tree.

One of the few Apples raised in North America which has achieved any

SOME GOOD DESSERT APPLES

degree of popularity in Britain is Mother, often referred to as American Mother. The fruit is medium-sized, conical, golden-yellow, and partly covered with a red flush. The flesh is firm, crisp, and with a delicious flavour. Mother ripens in October and will keep until November.

The choicest Apple for the month of November is Ribston Pippin, which was raised in Yorkshire well over two hundred years ago, and is still, without doubt, one of the finest of all Apples. It is frequently stated that Ribston will keep until February, but although the fruit will keep until this month the flavour is not retained, and it should be used about the end of November. The fruit is of medium size, round, slightly angular, yellow, partly covered with a reddish flush and a slight suggestion of russetting. The flesh is yellow, crisp, and juicy, and has a delicious aromatic flavour. Ribston is not a variety suited to a dry soil. If the roots are allowed to become dry during the growing season the fruits will never attain their full flavour.

Another good Apple for November is Egremont Russet, which is a very attractive Apple more or less covered with golden-brown russetting. The flesh, although crisp, cannot be described as juicy, but the lack of juice is more than compensated for by the excellent quality. Egremont makes an ideal tree for the garden as it is not too strong a grower and spurs freely. It is difficult to understand why this Russet type is not more popular with the amateur. Unlike the usual varieties Russets are seldom attacked by the two pests of the amateur gardener, Apple Sawfly and Apple Scab. Another excellent Russet is Rosemary Russet, with its round, conical fruits. The colour is greenish-yellow, flushed light red, and has a small amount of russetting. It is a firm, crisp, juicy Apple with a rich flavour. It spurs freely and is suitable for growing as a restricted type of tree.

To maintain the supply over Christmas there is the most highly flavoured of all Apples, Cox's Orange Pippin, which is so well known that it does not require description. However, this variety will not do equally well in all localities, and if an attempt is to be made to grow it in the colder or wetter districts the tree should be given the protection of a warm wall. As an alternative to Cox's Orange Pippin the variety Margil could be planted. This is an old variety and for some unknown reason seems to have lost some of its popularity during recent years. It has a smallish, round, yellow fruit with a red flush. The flesh is yellowish, crisp, and the flavour is excellent. This variety is deserving of greater recognition by the small garden owner. No list of Apples for this season could

be complete without Blenheim Orange. Admittedly an ideal culinary Apple, Blenheim's own peculiar flavour appeals to those who appreciate a flavour with character and not merely insipid sweetness. It used to be said that Blenheim took a long time to settle down into bearing, but with the use of modern dwarfing or semi-dwarfing rootstocks this delay in fruiting has been largely overcome.

For use from December to February there is Orleans Reinette, which in the writer's opinion is one of the best flavoured of all Apples. The late E. A. Bunyard, that great connoisseur of varieties, aptly described the flavour as intermediate between Ribston Pippin and Blenheim Orange. The fruit is of medium size, round and flat, golden-yellow with a reddish flush. This Apple is best suited to the heavier types of soil because growth is not too good when the ground is thin and dry. Like Cox's Orange Pippin it requires a warm district, and where conditions in the open are not ideal it should be given the shelter of a warm wall or fence.

With the passing of Orleans Reinette the peak season for the aromatic type of Apple is over, but there are still several good Apples which will prolong the season for several months. One of these is a new apple called Winston. This is a round, conical fruit practically covered with a deep crimson flush and stripes. The flesh is crisp, juicy, and of good flavour and the fruits will keep until the beginning of April. Another good Apple which keeps until March is King's Acre Pippin. The fruit varies from round to conical and is greenish with an occasional flush and some russeting. This is an old variety but is still popular. Last to be mentioned is Sturmer Pippin, which will keep until May. The fruit is of medium size, green when picked, and changes to a yellowish-green. The flesh is firm, crisp and juicy and, when well-ripened, has an excellent flavour. The fruit should be left on the tree as long as possible—even until after the leaves have fallen. This variety requires a really good season to finish the fruits off properly and therefore Sturmer is not suitable for the colder districts.



Cox's Orange Pippin—the apple with the richest flavour



Ellison's Orange—has a slight anised flavour; less susceptible to spring frost than most varieties.



Laxton's Fortune—a free cropping September–October variety with a delicious flavour



Epicure—a high-quality early apple

Modernizing the Fruit Garden

By H. B. S. MONTGOMERY

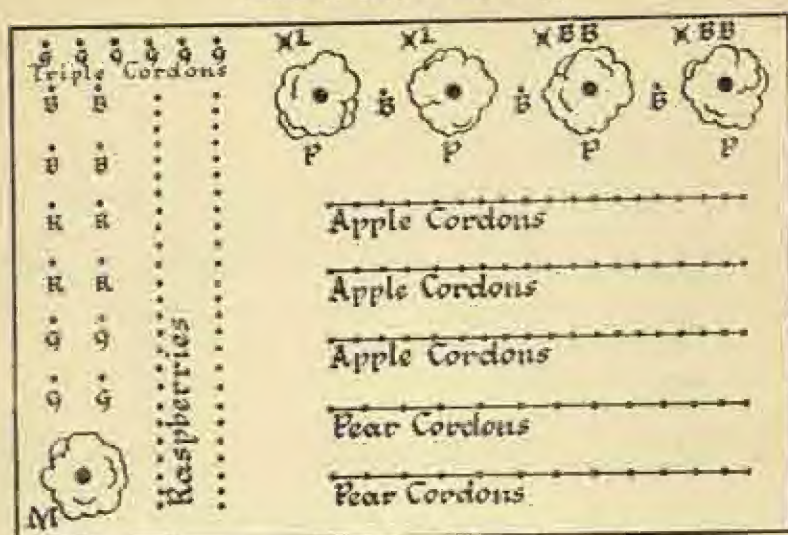
BEFORE 1940 THE AVERAGE GARDENER MADE LITTLE USE OF THE SCIENTIFIC information that was available on fruit growing. Fruit trees were regarded as an expensive luxury involving much labour and fruits did not, therefore, appear to any extent in the smaller gardens. During the war years, the larger gardens suffered from an almost complete lack of labour so that the laborious traditional methods of culture had to be abandoned and a search made for methods that entailed less labour. The shortage in shops encouraged everyone with a garden to attempt to grow some fruits. Thus during the war years there has been an insistent demand that the results of research should be interpreted in terms of the private garden.

At first sight it might seem that many of the problems of the large garden differ greatly from those of the small garden, but in fact most of them have the same broad solution where fruits are concerned, for it is only by careful planning from the beginning that fruits can be grown successfully in either. Planning in the large garden ensures the most economical use of labour, the expense of which is an almost crippling burden nowadays, and also makes it possible to use the treatments that give the maximum crops. In the small garden planning is necessary if the best use is to be made of the limited space available.

Fruit trees are a permanent crop and must be planted so that they may grow and develop without interference from each other or from other crops. Research has shown how widely different are the needs, for instance, of dessert Apples and Black Currants, both as regards manuring and spraying. Thus the Apple requires a relatively low level of nitrogen and frequent spraying with lime-sulphur to produce clean fruits, while the Black Currant needs liberal amounts of nitrogenous manure and will not tolerate lime-sulphur after blossom. These two fruits therefore do not make good companions.

Ideally each sort of fruit should be allotted a separate patch of ground so that it is a simple matter to give each just the treatment it requires. In a large garden this is easy to arrange and an area of ten rods properly planned (see page 158), could provide a generous supply of fruit in succession

GARDENS AND GARDENING



throughout the season with less trouble and labour than a much larger area laid out in a haphazard manner. In a small garden, however, this is not so easy, and to fit in everything that is wanted some mixing of fruits may be necessary, but the worst evils of interplanting can be avoided if only those plants with more or less similar likes and dislikes are planted together. Thus Black Currants could be put along with Plums as both demand nitrogen, and Gooseberries and Red Currants with Apples as they need potash and less nitrogen.

Where birds are troublesome it is a great help to keep the soft fruit bushes grouped together so that they can all be enclosed in a simple bird-proof wire cage. Fruit trees and bushes should not be mixed up among the vegetables or flowers as it is then impossible to give the correct treatment. An exception to this rule is the Strawberry bed, which benefits from rotational treatment and can fit in quite nicely with the vegetable garden crops. A constant supply of Strawberries can be ensured by planting a new bed every two years or so, preferably following early Potatoes, Peas, or salad crops that are off the ground early in the

summer, and scrapping the old beds when they are three or four years old.

Mistakes are so often made in the amount of space allowed for each tree and bush, and they are very difficult to rectify when ten years or so later it becomes obvious that the trees are too close. This question of the right distance apart is bound up with the choice of rootstock, and nowadays it is possible to specify a suitable rootstock to provide ultimately almost any size of tree. On the whole, in gardens where manual labour and simple equipment are the rule, dwarf trees are most suitable (see page 161). For such on good soils it is essential to get Malling No. IX stock for Apples, Quince C stock for Pears and Common Plum, or Common Mussel stock for Plums, though if the soil is poor something more vigorous might be advisable. The form of tree must also be considered. The bush tree is probably the simplest to grow, but as each tree requires from eight to ten feet square, it is not the most suitable where a range of varieties is to be grown in a small space. Cordons (see page 162) or Dwarf Pyramids at three feet apart in rows six feet apart offer more scope for this purpose. Plums are usually grown as half standards and would require twelve feet square. At present Sweet Cherry trees cannot be sufficiently dwarfed by rootstocks to be suitable for garden culture, but the Morello Cherry has a naturally dwarf habit and deserves a place in most gardens. Most soft fruit bushes can be grown at a spacing of four feet by five feet, Raspberries at one and a half feet by five feet and Strawberries at one and a half feet by two and a half feet. Such spacings may seem wasteful at planting-time but will be only just sufficient when the plants are grown up.

The choice of garden varieties merits very careful consideration. Space is much too valuable to be devoted to the commoner varieties that can be cheaply bought from the greengrocer in normal times. Instead, garden space should be reserved for those choice varieties seldom, if ever, marketed, and sufficient varieties should be selected to ensure a succession of fruit throughout the season: thus the season would open with green Gooseberries at the end of May, followed by Strawberries, Raspberries, ripe Gooseberries, Red Currants and Black Currants, then Plums and early Apples succeeded by the main Apple and Pear varieties with late-keeping sorts carrying on until May.

In the case of soft fruits the questions of variety and health are of paramount importance. Not only do varieties differ in their habit of growth,

time of ripening, and quality of fruit but also they vary in their reaction to soils, weather conditions, and sprays. It is therefore wise to seek the advice of the local horticultural advisory officer before deciding on the best varieties for any situation. But health is of even greater importance, and the degeneration of soft fruits, so long ascribed to a reversion to the wild state, has been shown to be due to virus diseases. These diseases not only stunt the plant and reduce its cropping, but all cuttings or runners taken from an infected plant are themselves infected. The secret to success in growing soft fruits depends therefore on propagating only from selected healthy plants or, if plants have to be purchased, on buying as far as possible only those certified healthy and true to name by the Ministry of Agriculture. Certification schemes exist for Black Currants, Strawberries, and Raspberries but not yet for Gooseberries, Red Currants, or Loganberries.

Having planned and planted the garden, attention to cultural details can greatly assist in obtaining useful crops. Apart from the control of pests and diseases, about which much has been written in a readily available form, pruning is possibly the most important job to be done. The pruning frequently done in a garden, especially to Apples, is often a positive hindrance to the production of good fruits, ranging, as it does, from the removal of virtually all the new growth to leaving the trees completely unpruned. Either extreme is bad, and research has clearly shown that the chief objects of winter pruning are to direct the growth where it is wanted and to balance the proportion of fruit buds and fruit to wood buds and new growth. Thus while the Apple tree is young and being shaped, pruning can be fairly severe, but in three or four years less should be cut away so that the tree may develop fruit buds. Once the tree comes into bearing shaping becomes less important, and the aim is to promote sufficient new growth to keep the tree healthy and prevent too much fruit being produced in any year. If the tree grows too strongly pruning should be lighter, whereas if there is little growth and very many fruit buds the pruning should be more severe. There are several modern pruning methods to choose from but space prohibits their description here.

Winter pruning is not really suitable for trained trees such as cordons, espaliers, and dwarf pyramids, though with dwarfing rootstocks moderately good results may be obtained. For heavy crops and really shapely trees summer pruning is needed, as it keeps the growth of the tree within bounds without delaying cropping to the same degree as does winter



*The very vigorous Bramley's Seedling
dwarfed and brought into heavy cropping
by M. IX rootstock*



*Beauty of Bath on a vigorous rootstock,
developing into a large tree, unsuitable for
a really small garden.*



*Left: Orlean's Reinette
Normally slow to fruit, cropping at five
years on M. IX rootstock*



*Oblique cordons—a way of getting
a lot of varieties in a small space*



*Pear Durendeu
Hardy and heavy cropping*



*Pear Emile d'Heyst
A good choice for many conditions*

*Opposite: Pear Conference
One of the most reliable pears*





Red Currant Laxton's No. 1
Worthy of a place in every garden

Black Currant Boskoop Giant
A large-fruited early variety



pruning. The simplest form of summer pruning consists in shortening all the laterals to six or seven inches after all extension growth has finished (usually in early August for Apples); such laterals are further pruned back in the winter, but recent research has shown that the best results are obtained by cutting back to three inches or less those laterals that have become woody at their base. The job can be done throughout the summer months or, if time is short, at two periods, in early to mid-July and in September.

There is, of course, still much more to learn about the application of research to the special conditions of the garden, and the acquisition by East Malling Research Station just before the war of Bradbourne House, with its spacious walled and open gardens, has provided an opportunity for work along these lines. The grounds are being gradually planted with demonstration gardens embodying the principles already recognized and with trial plots where fresh ideas are being tried. Thus a range of Apricot varieties is being grown against the walls in a search for a reliable cropper for our climate, and bush peaches are being planted in the open, away from the walls, to see which pruning treatment will give the best results. Here also against the walls are being grown magnificent fan-trained Peach and Morello Cherries as an example of what can be done when time and skill are available. In the larger gardens the layout is such that hand-work in digging and hoeing is reduced to a minimum, and cultivation can be done by small garden tractors. Most of the fruit garden has now been grassed down and can thus easily be kept tidy by frequent cutting with a motor mower.

These gardens have shown that there is no long waiting period before cropping begins. Thus cordon apples and pears, planted as one year old trees, carried some fruit eighteen months after planting and a really useful crop the following year. The dwarf pyramids and dwarf bushes, also planted as one year olds, lagged about a year or so behind the cordons in cropping, and the plum trees, planted as two year olds, a couple of years behind them. Naturally very heavy crops of soft fruit were being harvested by this time.

There is, therefore, no reason why anyone, even if advanced in years, should hesitate to plant up a fruit garden on the lines suggested, provided the situation is not unduly subject to spring frosts and the soil is suitable or can be made suitable.

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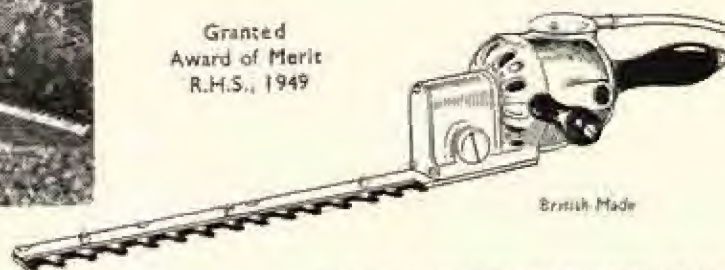
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